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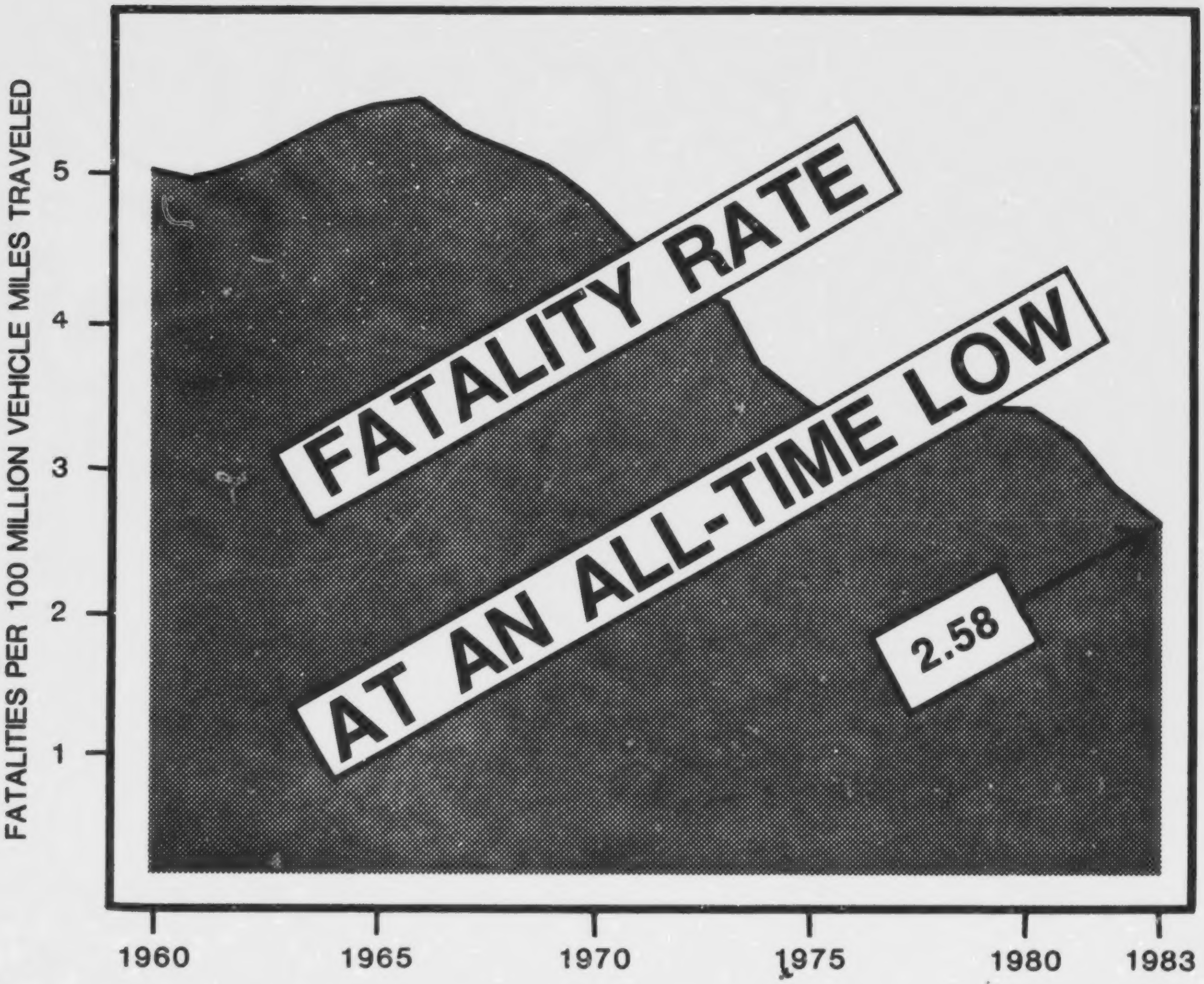
U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

National Center for
Statistics and Analysis
Washington, D.C.
20590

FATAL ACCIDENT REPORTING SYSTEM 1983

**A Review of Information
on Fatal Traffic
Accidents in the U.S.
in 1983.**



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Highlights 1983

During 1983, 42,584 men, women, and children died in motor vehicle traffic accidents. That's more than 116 people per day. This is a 3.1 percent decline from the 1982 death toll of 43,945, and a 16.7 percent decline from the 1980 death toll of 51,091. Someone died on the Nation's highways every 12.3 minutes on average throughout 1983. More than 46 percent of all accidental deaths in the U.S. during 1983 occurred on the Nation's highways.*

Following is a summary of some significant statistics on fatal accidents in the U.S. in 1983.

ALCOHOL

- More than half of all fatally injured drivers (57 percent) had been drinking, and close to half (46 percent) were legally intoxicated. Although both percentages are excessive, the percentage of legally intoxicated drivers has decreased by 4 percentage points since 1980.
- The incidence of alcohol involvement was greatest in late night and early morning accidents when 80-90 percent of all fatally injured drivers had been drinking.
- Drivers who had been drinking were virtually never wearing safety belts (only 1.6 percent used them).

SAFETY BELTS

- Only about 4 percent of fatally injured automobile occupants were wearing safety belts.
- Since 1980, child restraint use increased almost 300 percent. In 1983 more than 26 percent of passenger car occupants under the age of 5 who survived fatal accidents were using restraints. In contrast, those who were fatally injured had a use rate of only about 16 percent.
- Cars with automatic safety belts had significantly lower fatality rates than similar cars with standard belts.

FATALITY REDUCTIONS 1980-1983

- The fatality rate in 1983 was 2.58 fatalities per 100 million vehicle miles of travel, the lowest ever recorded.
- The fatality reduction from 1980 to 1983 was greater for younger drivers than for older drivers (due in part to an 8 percent drop in the population of 15-20 year olds). Male driver fatalities showed a larger reduction than female driver fatalities in most age groups.
- Single vehicle accident fatalities dropped 22 percent, about twice as much as multi-vehicle accident fatalities.
- The greatest reduction, 20 percent, occurred where the posted speed limit was between 5 and 25 mph. Fatalities on highways with a 55 mph speed limit dropped only 9 percent.
- Among days of the week, Fridays, Saturdays and Sundays accounted for more than half of all deaths. However, Saturday and Sunday had the highest reductions; 18 and 20 percent respectively, Tuesday had the lowest (12.3 percent), and the remaining days were close to the average (16.7 percent).
- During late nighttime hours fatalities dropped 24 percent. They dropped 17 percent during evening commuting hours but only 6 percent during the middle of the day.
- Subcompact car occupant fatalities increased almost 8 percent as compared to fatalities in larger cars, which decreased by almost 40 percent.
- Motorcycle, light truck and heavy truck occupant fatalities all dropped about 17 percent.
- In accidents involving heavy trucks (26,000 pounds or greater), the reduction in truck occupant fatalities (17 percent), was partly offset by increased deaths of other vehicle occupants (2 percent) and non-occupants (2 percent) who were involved in accidents with heavy trucks.

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*Accident Facts, 1983, National Safety Council.

- Pedestrian and pedalcyclist fatalities dropped less than vehicle occupant fatalities.

OTHER CHARACTERISTICS

- Table 1 presents a ready reference for important FARS 1983 data and other national statistics.

- Head-on and angle crashes accounted for almost 80 percent of fatalities in multi-vehicle crashes.

- As in previous years, more fatalities occurred in rural areas than in urban areas.

- Interstate highways, which had an increase over 1982 in fatal accident involvements, would have had a decrease if heavy truck involvements on the system had not increased so dramatically.

- Accidents on arterial roadways accounted for more than half of all fatalities. For every traffic fatality on the Interstate System, five people died on other arterials, although travel on the other arterials is less than 2 1/2 times that on the Interstate System.

- Most deaths resulted from accidents that occurred during normal weather conditions, with only 13.2 percent of them associated with inclement weather.

- Passenger cars, light trucks, and motorcycles, in that order, were the vehicle types most frequently involved in fatal accidents during 1983 and were associated with the largest proportions of occupant fatalities.

- In 1983, 82 percent (34,840) of all motor vehicle traffic fatalities were vehicle occupants. More than two-thirds of these were drivers.

TABLE 1
1983 NATIONAL STATISTICS AND RATES

National Statistics*	
Population	233,981,000
Registered Vehicles	169,446,278
Licensed Drivers	154,221,003
Vehicle Miles Traveled (VMT)	1,649,106,000,000
Fatal Accident Statistics	
Fatal Accidents	37,971
Single Vehicle	23,045
Multiple Vehicle	14,926
Vehicles in Fatal Accidents	55,099
Passenger Cars	33,288
Motorcycles	4,141
Other Motorized Cycles	160
Light Trucks	9,870
Medium Trucks	664
Heavy Trucks	4,174
Buses	306
Special Vehicles	1,523
Unknown	973
Fatalities	42,584
Occupants	34,840
Nonoccupants	7,744
Involved Occupants of Vehicles	90,663
Involved Drivers	54,649
Other Occupants	36,014
Nonoccupants	8,641
Rates	
Licensed Drivers per Person	0.66
Registered Vehicles per Person	0.72
VMT per Registered Vehicle	9,732
Fatal Accidents per 100 million VMT	2.30
Fatalities per 100 million VMT	2.58
Involved Vehicles per Fatal Accident	1.45
Fatalities per Fatal Accident	1.12
Occupants per Fatal Accident	2.39
Fatalities per 1,000 Population	0.18

*Source: U.S. Bureau of Census, July 1983 estimates and Federal Highway Administration.

Foreword

The Fatal Accident Reporting System (FARS) gathers data on the most severe traffic accidents that occur each year--those that result in loss of human life. It supplies the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) with information that is invaluable to its mission of reducing the number of traffic accidents and the losses that result from them. These data are essential to NHTSA's programs to identify traffic safety problems, to develop and implement better ways of dealing with those problems, and to evaluate existing and proposed highway and motor vehicle safety standards and programs.

FARS is operated and maintained by NHTSA's National Center for Statistics and Analysis (NCSA). FARS data are gathered on motor vehicle accidents that:

- Occurred on a roadway customarily open to the public;
- Resulted in the death of a person within 30 days of the accident;*
- Were not the result of natural disasters such as earthquakes, floods or torrential rains.

Other definitions used in FARS are contained in the Glossary.

FARS data are collected by each State under contractual agreements with NHTSA. The contracts are managed by Regional Contract Technical Managers in 10 NHTSA regions.

State employees gather, interpret, codify and transmit data on all fatal accidents to NHTSA. The number of analysts in each State depends on the number of fatal accidents that are expected to occur in the State based on previous years' records. Sources of data may include:

- Police Accident Reports
- State Vehicle Registration Files
- State Driver Licensing Files
- State Highway Department Files
- Vital Statistics Documents
- Death Certificates
- Coroner/Medical Examiner Reports
- Hospital Medical Reports
- Emergency Medical Services Reports

As the state analysts enter data into NHTSA'S computerised central data file, the data are automatically checked on-line for range and consistency as part of FARS quality control.

Range checks ensure that the codes submitted are valid. For example, a code of "4" for the element "Sex" would be rejected by the system since the only valid codes are "1" for "Male," "2" for "Female," and "9" for "Unknown."

Consistency checks ensure that no inconsistent data are entered. For example, if an analyst codes 11:00 a.m. as the time of the accident and "dusk" as the light condition, both values would be rejected because they are inconsistent.

Errors are displayed on the analyst's terminal as data are entered, enabling the analyst to make corrections immediately.

FARS data are also checked for timeliness, completeness, and accuracy. Timeliness is monitored by FARS headquarter's staff and by the 10 Regional Contract Technical Managers. The data submitted by each State is updated and reviewed weekly. Similarly, several programs continually monitor and improve the completeness and accuracy of the data.

The system contains descriptions, in a standard format, of each fatal accident reported. The format allows coding of approximately 90 different data elements to characterise each accident and the vehicles and persons involved in it. A few data elements may be added, dropped or modified each year to reflect changing user needs, vehicle designs, and areas of highway safety emphasis. Data are reported on three forms:

The Accident Level Form includes information on the time and location of the accident, the first harmful event, whether it was a "hit and run" accident, whether a school bus was involved, the number of vehicles and people involved, and weather conditions.

---

*FARS data include only those accidents which result in a death within 30 days. DOT adopted the 30-day requirement to expedite its data and because studies show that more than 98 percent of all motor vehicle related fatalities occur within 30 days of the accident. Most other countries use the 30-day reporting period.

The Vehicle/Driver Level Form includes data on vehicle type and its role in the accident, initial and principal impact points, the most harmful event, and the driving record and license status of each driver.

The Person Level Form provides details that include age and sex; whether the person was a driver, passenger, pedestrian, pedalcyclist or other non-occupant; alcohol involvement; injury severity, etc.

The forms used for reporting 1983 accidents are in Appendix A.

NHTSA's National Center for Statistics and Analysis (NCSA) each year responds to more than 3,000 requests for FARS information and distributes almost 60 computer tapes of data. Requests for information come from the Congress, Federal agencies, State and local governments, research organizations, insurance companies, automobile manufacturers, private citizens and the media.

The data are available for each year since 1975 when FARS began operation. The data are available in three ways:

- Computer tapes can be purchased and processed on the user's own computer system. The cost is $150. A sample order blank is in Appendix B.
- Modest requests for specific data will be answered by NCSA at no charge. Response usually requires about 2 weeks, depending on the nature and complexity of the data requested.
- An account can be established with NCSA's computer contractor. Costs include computer time charges.

FARS fully conforms with the requirements of the Privacy Act by omitting all personal identifying information such as names, addresses, or social security numbers.

While this report presents a wide spectrum of information in many different combinations, it contains only a small fraction of the potential uses of the data and only suggests the scope of analyses that can be performed using them. The report is not intended to be a comprehensive presentation. **Statements about the data in this text are not based on statistical analyses.**

Four further caveats should be kept in mind while reading this report. First, percentages shown, for the most part, have been rounded to the nearest 1/10 of 1 percent. As a result, they may not total exactly 100 percent. In figures and tables that show percentages, the base number upon which these percentages are computed is either explained on the figure or indicated by "100 percent" adjacent to the base number in the tables.

Second, most tables and figures include a number in parentheses under the title. This number is the population of the primary subject of the figure or table. The primary subject will usually be total fatalities, total fatal accidents, or some subset of either of these two. Subset populations, when used for the first time, are defined in the accompanying text.

Third, the State records, from which FARS data are collected, vary in content and level of detail from State to State. Also, availability of certain FARS data elements vary among jurisdictions. Because of this, it is not always possible for a State analyst to uniquely identify an attribute of a data element. In this event, the analyst uses the code "unknown" for the particular data element. "Unknown" data are included in this report to provide complete and unbiased information.

Most of the information in this report comes directly from the FARS files themselves. Detailed exposure information -- vehicle miles travelled under particular circumstances or numbers of licensed drivers and registered vehicles -- is generally not included or used. Thus, there is little rate information such as the per capita rate of fatalities by age group, or the rate of accident involvement for different classes of vehicles. The significance of some of the data presented in this report may not be obvious until such exposure based rates are calculated.

These data concern only fatal accidents. The National Accident Sampling System (NASS) is the complementary data base on all police reported accidents, including those which resulted in nonfatal injury and/or property damage. Data on nonfatal accidents are an important element in accident analysis programs.

To conform with other national data gathering systems, fatal accidents that occurred in Puerto Rico are not included in U.S. totals. Data from Puerto Rico are reported separately in Chapter IV.

For additional information concerning the 1983 FARS report, contact the National Center for Statistics and Analysis, National Highway Traffic Safety Administration, NRD-33, 400 Seventh Street, S.W., Washington, D. C. 20590, or telephone (202) 472-7040 or 426-4844.

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I.
Fatality Reduction 1980-1983

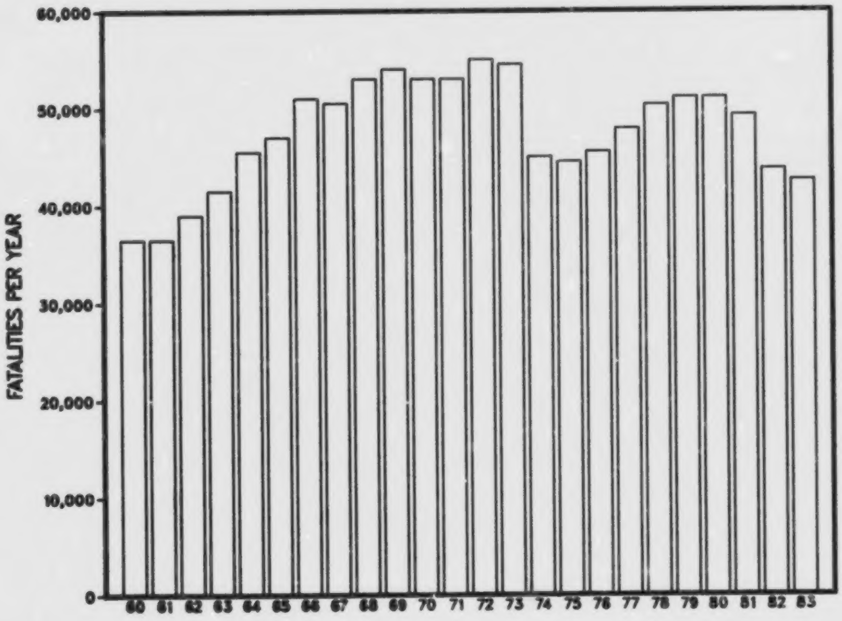
In 1983, traffic fatalities in the United States continued their 3-year decline, dropping from 43,945 in 1982 to 42,584 in 1983--a 3.1 percent drop. This is the lowest number of traffic fatalities since 1963. Since 1980, when 51,091 people died in traffic accidents, traffic fatalities have dropped dramatically by one sixth.

The decrease in fatalities occurred despite increases in vehicle travel. The estimated 1983 fatality rate of 2.58 fatalities per 100 million vehicle miles of travel is the lowest ever recorded, and is 24 percent lower than the 3.38 rate observed in 1980. Similarly, fatalities per 100,000 population dropped from 2.2 in 1980 to 1.8 in 1983.

FATALITY TRENDS

The number of fatalities per year rose steadily from 1961 to 1966, and increased at a lower rate through 1973. In 1974, with the fuel crisis and imposition of the national 55 mph speed limit, fatalities were dramatically lower, and remained almost constant during 1975 and 1976. They increased again over the next two years, and remained constant during 1979 and 1980. The latest decline, which began early in 1981, brought traffic fatalities for 1983 to the lowest annual total in the last 20 years. The 16.7 percent decrease from 1980 to 1983 occurred despite increases in the number of drivers, vehicles, and miles of travel (Figure I-1).

FIGURE I-1
U.S. TRAFFIC FATALITIES BY YEAR
1960-1983



The fatality rate per vehicle mile of travel increased slightly from 1960 to 1966, declined significantly during the next decade, leveled off between 1976 and 1980, and declined sharply during the last three years. The rate for 1983 was the lowest ever recorded (Figure I-2).

Single vehicle accidents dropped more than all other accidents from 1980 to 1983, nonoccupant accidents dropped less and multi-vehicle accidents showed the smallest decline (Table I-1).

DEMOGRAPHIC FACTORS

Younger driver fatalities dropped more than older driver fatalities. This is due, in part, to an 8 percent drop in the population of 15-20 year olds. Nighttime and single vehicle fatalities went down more than daytime and multi-vehicle fatalities. Since single vehicle accidents are more prevalent at night and with younger drivers, it is possible that the reduction in this type of accident reflected the reduction in the number of younger drivers at risk.

Vehicle occupant fatalities dropped slightly more than nonoccupant fatalities between 1980 and 1983 (Table I-2).

FIGURE I-2
U.S. TRAFFIC FATALITY RATE BY YEAR
1960-1983

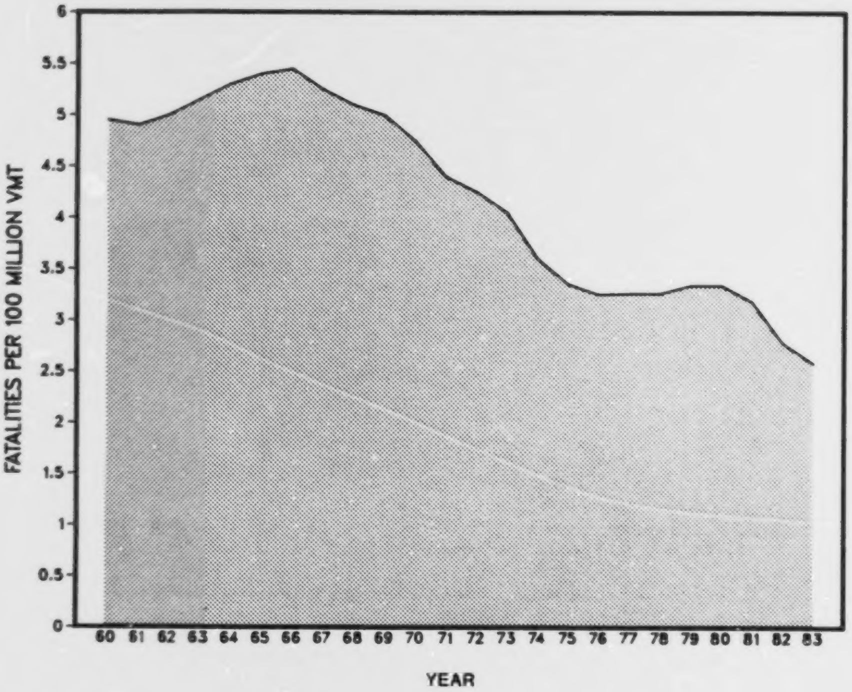


TABLE I-1
FATAL TRAFFIC ACCIDENTS BY TYPE
1980-1983

Accident Type	1980	1983	Percent Change
Nonoccupant	9,100	7,730	-15.1
Single Vehicle	19,591	15,784	-19.4
Multi-Vehicle	16,593	14,457	-12.9
Total	45,284	37,971	-16.1

TABLE I-2
TRAFFIC FATALITIES BY PERSON ROLE
1980-1983

Person Role	1980	1983	Percent Change
Occupant	41,927	34,840	-16.9
Nonoccupant	9,164	7,744	-15.5
Total	51,091	42,584	-16.7

Nonoccupant fatality reductions differed considerably by age, with most of the reduction from 1980 concentrated in people younger than 20 or over 44. The largest reductions in driver fatalities and in passenger fatalities were for occupants under 25 (Table I-3).

Some of the fatality changes by age can be attributed to population changes. While the total United States population increased by almost 3 percent from 1980 to 1983, population shifts among age groups varied widely. The number of young people (aged 15-20) dropped 8.1 percent, while people aged 35-44 increased by almost 14 percent (Table I-4). All else being equal, the number of fatalities would be expected to change by the same percent.

TABLE I-3
TRAFFIC FATALITIES BY AGE AND PERSON ROLE
1960-1983

	Under 15	15 to 17	18 to 20	21 to 24	25 to 34	35 to 44	45 to 54	55 to 64	Over 64	Total
Drivers										
1980	170	1,750	4,071	4,901	7,367	3,482	2,609	2,104	2,323	28,816
1983	133	1,192	3,060	3,873	6,331	3,257	2,061	1,793	2,406	24,135
% Change	-21.8	-31.9	-24.8	-21.0	-14.6	-6.5	-21.0	-14.8	+3.6	-16.2
Other Occupants										
1980	1,725	1,774	2,212	1,881	1,922	867	692	688	1,241	13,111
1983	1,457	1,203	1,614	1,484	1,653	801	573	622	1,245	10,705
% Change	-15.5	-32.2	-27.0	-21.1	-14.0	-7.6	-17.2	-9.6	+0.3	-18.3
Nonoccupants										
1980	1,852	487	644	739	1,187	723	772	802	1,777	9,164
1983	1,496	353	492	663	1,171	719	626	690	1,425	7,744
% Change	-19.2	-27.5	-23.6	-14.3	-1.3	-0.5	-18.9	-14.0	-19.8	-15.5
Total										
1980	3,747	4,011	6,927	7,521	10,476	5,072	4,073	3,594	5,341	51,091
1983	3,086	2,748	5,166	6,020	9,155	4,777	3,260	3,105	5,076	42,584
% Change	-17.6	-31.5	-25.4	-20.0	-12.6	-5.8	-20.0	-13.6	-5.0	-16.7

Note: For 1980, 329 Fatalities of Unknown Age are Included in the Total Column.

For 1983, 191 Fatalities of Unknown Age are Included in the Total Column.

TABLE I-4
ESTIMATES OF POPULATION BY AGE AND SEX
1980-1983

	Under 15	15 to 17	18 to 20	21 to 24	25 to 34	35 to 44	45 to 54	55 to 64	Over 64	Total
Male										
1980	26,217	6,329	6,585	8,524	18,567	12,669	10,980	10,175	10,367	110,413
1983	26,386	5,606	6,294	8,799	19,984	14,464	10,810	10,379	10,992	113,714
% Change	+0.6	-11.4	-4.4	+3.2	+7.6	+14.2	-1.5	+2.0	+6.0	+3.0
Female										
1980	25,071	6,064	6,478	8,514	18,859	13,155	11,752	11,584	15,346	116,823
1983	25,202	5,381	6,101	8,704	20,162	14,959	11,526	11,840	16,392	120,267
% Change	+0.5	-11.3	-5.8	+2.2	+6.9	+13.7	-1.9	+2.2	+6.8	+2.9
Total										
1980	51,288	12,393	13,063	17,038	37,426	25,824	22,732	21,759	25,713	227,236
1983	51,588	10,987	12,395	17,503	40,146	29,423	22,336	22,219	27,384	233,981
% Change	+0.6	-11.3	-5.1	+2.7	+7.3	+13.9	-1.7	+2.1	+6.5	+3.0

Source: U.S. Bureau of Census

Thus, for young people approximately 8.1 percent of their observed 27.6 percent fatality drop was due to population changes, and the remaining 19.5 percent is the per capita decrease. Similarly, since those aged 35-44 increased by 13.9 percent, their fatalities might be expected to increase by the same amount if nothing else changed. The adjusted 19.7 percent drop is obtained by subtracting the 13.9 percent population growth from the observed 5.8 percent fatality drop. The adjusted figures show much less variation than the unadjusted figures, though young people still have the greatest decrease and those over 64 the smallest (Table I-5).

When viewed against their proportion of the population, fatalities rose slightly for those under 15, decreased for those 15 to 20 and increased by about 5 percent for those over 20 (Figure I-3).

FIGURE I-3
CHANGES IN TRAFFIC FATALITIES AND FATALITIES PER 100 MILLION POPULATION BY AGE
1980-1983

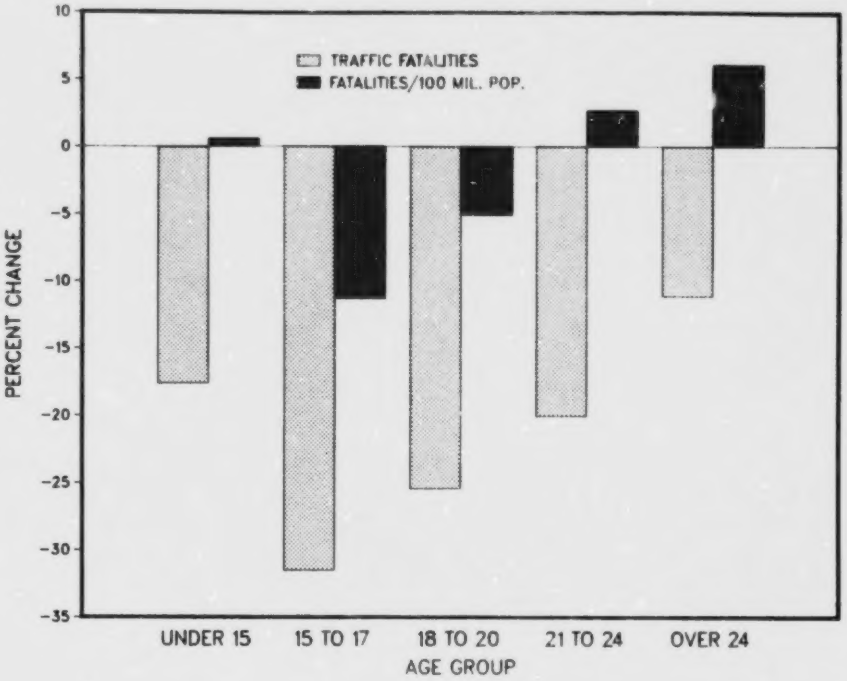


TABLE I-5
TRAFFIC FATALITIES BY AGE AND SEX
1980-1983

	Under 15	15 to 17	18 to 20	21 to 24	25 to 34	35 to 44	45 to 54	55 to 64	Over 64	Total
Male										
1980	2,331	2,729	5,430	5,980	8,283	3,781	2,921	2,447	3,266	37,392
1983	1,934	1,884	3,901	4,714	7,095	3,502	2,300	2,035	2,991	30,495
% Change	-17.0	-31.0	-28.2	-21.2	-14.3	-7.4	-21.3	-17.6	-8.4	-18.4
Adj. Change	-17.6	-19.6	-23.8	-24.4	-21.9	-21.5	-19.8	-19.6	-14.4	-21.4
Female										
1980	1,415	1.281	1,496	1,539	2,193	1,291	1,152	1,147	2,075	13,609
1983	1,152	864	1,264	1,306	2,060	1,275	960	1,070	2,085	12,083
% Change	-18.6	-32.6	-15.5	-15.1	-6.1	-1.2	-16.7	-6.7	+0.5	-11.7
Adj. Change	-19.1	-21.3	-9.7	-17.3	-13.0	-14.9	-14.8	-8.9	-6.3	-14.6
Total										
1980	3,747	4,011	6,927	7,521	10,476	5,072	4,073	3,594	5,341	51,091
1983	3,086	2,748	5,166	6,020	9,155	4,777	3,260	3,105	5,076	42,584
% Change	-17.6	-31.5	-25.4	-20.0	-12.6	-5.8	-20.0	-13.6	-5.0	-16.7
Adj. Change	-18.2	-20.2	-20.3	-22.7	-19.9	-19.7	-18.3	-15.7	-11.5	-19.7

Note: For 1980, 324 Fatalities of Unknown Age and 10 of Unknown Sex are included in the Total Column.

For 1983, 186 Fatalities of Unknown Age and 6 of Unknown Sex are included in the Total Column.

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SEX

Male drivers were involved in substantially fewer fatal accidents in 1983 than in 1980. However, female driver involvement dropped only slightly (Table I-6). The decrease in male fatalities, when adjusted for changes in the population, ranged from a 24.4 percent drop for the 21 to 24 age group to only a 17.6 percent drop for those under 15. The greatest drop for females occurred in the 15-17 age group (down 21.3 percent), while women 65 years and older had a decrease of only 6.3 percent (Table I-5).

TABLE I-6
INVOLVED DRIVERS BY AGE AND SEX
1980-1983

	Under 15	15 to 17	18 to 20	21 to 24	25 to 34	35 to 44	45 to 54	55 to 64	Over 64	Total
Male										
1980	213	3,113	7,595	8,887	[illegible]	[illegible]	[illegible]	[illegible]	2,930	[illegible]
1983	163	2,131	5,348	6,869	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% Change	-23.5	-31.5	-29.6	-22.7	-13.7	[illegible]	[illegible]	[illegible]	+1.7	[illegible]
Female										
1980	27	872	1,467	1,686	2,773	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1983	40	708	1,359	1,563	2,611	[illegible]	1,023	916	[illegible]	[illegible]
% Change	+48.1	-18.8	-7.4	-7.3	-5.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total										
1980	240	3,985	9,062	10,574	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1983	203	2,839	6,707	8,432	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% Change	-15.4	-28.8	-26.0	-20.3	-12.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Note: For 1980, 133 Involved Drivers of Unknown Age and [illegible] of Unknown Sex are Included in the Total Column.

For 1983, 171 Involved Drivers of Unknown Age and [illegible] of Unknown Sex are Included in the Total Column. These include Drivers of Hit and Run Accidents. Prior to 1982, Hit and Run Drivers were coded as "Unknown if there was a Driver", and no Driver-Related Variables were coded.

VEHICLE OCCUPANT FATALITIES

From 1980 to 1983, vehicle registrations overall rose almost 5 percent. Although motorcycle registrations dropped 2.4 percent, there were no major shifts in the types of vehicles that were registered. For each vehicle type, fatalities per registered vehicle fell over 15 percent from 1980 to 1983 (Table I-7).

The most striking change occurred in passenger car fatalities. Deaths in subcompact cars increased almost 8 percent and large car occupant fatalities decreased by almost 40 percent (Table I-8 and Figure I-4). Vehicle registration changes in passenger cars by size may account for a small portion of this difference.

TABLE I-7
OCCUPANT FATALITIES, REGISTERED VEHICLES AND ACCIDENT INVOLVED VEHICLES BY VEHICLE TYPE
1980-1983

	Passenger Cars	Motor-cycles	Trucks & Buses	Other & Unknown	Total
Occupant Fatalities					
1980	27,414	5,153	8,796	564	41,927
1983	22,975	4,264	6,404	1,197*	34,840
% Change	-16.2	-17.3	-27.2		-16.9
Involved Vehicles					
1980	39,020	5,194	18,389	882	63,485
1983	33,288	4,301	15,014	2,496*	55,099
% Change	-14.7	-17.2	-18.4		-13.2
Registered Vehicles (000)[1]					
1980	121,724	5,725	34,166		161,615
1983	126,728	5,585	37,133		169,446
% Change	+4.1	-2.4	+8.7		+4.8

*In 1983 all vehicle level variables were coded as unknown for hit and run accidents where the driver or vehicle was never apprehended. Prior to 1982, there were no vehicle level variables coded for hit and run vehicles.

[1] Source: Federal Highway Administration, Highway Statistics Division.

TABLE I-8
OCCUPANT FATALITIES BY VEHICLE TYPE
1980-1983

		1980	1983	Percent Change
Passenger Car Wheelbases:		27,449	22,975	-16.3
Small Subcompact	- Under 96 Inches	4,994	4,912	-1.6
Subcompact	- 96 - 101 Inches	2,506	2,705	+7.9
Compact	- 102 - 111 Inches	6,292	5,614	-10.8
Intermediate	- 112 - 120 Inches	6,260	4,548	-27.3
Full Size	- Over 120 Inches	3,454	2,083	-39.7
Other		3,943	3,113	-21.0
Motorcycles		5,144	4,264	-17.1
Light Trucks		6,566	5,379	-18.1
Medium Trucks		285	166	-41.8
Heavy Trucks		976	806	-17.4
Buses		46	53	+15.2
Special Vehicles		1,152	1,060	-8.0
Unknown		309	137	
Total		41,927	34,840	-16.9

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FIGURE I-4
CHANGES IN PASSENGER CAR VEHICLE OCCUPANT FATALITIES BY VEHICLE SIZE
1980-1983

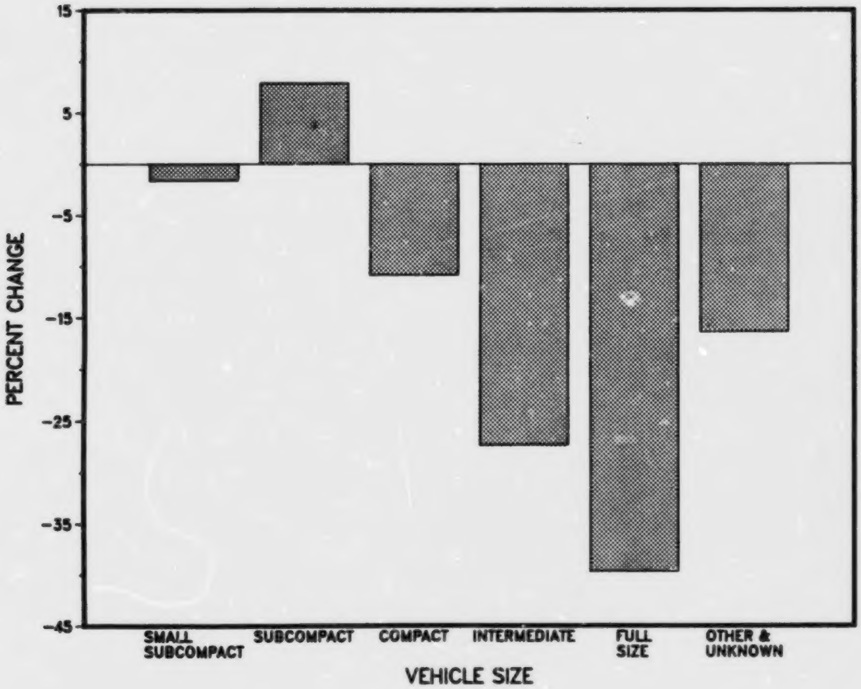

TABLE I-9
NUMBER OF VEHICLES IN FATAL ACCIDENTS BY TYPE
1980-1983

	1980	1983	Percent Change
Passenger Cars	39,059	33,288	-14.8
Small Subcompact	5,742	5,837	+1.7
Subcompact	2,996	3,438	+14.8
Compact	8,560	7,927	-7.4
Intermediate	10,126	7,621	-24.7
Full Size	6,287	3,909	-37.8
Other	5,348	4,556	-14.8
Motorcycles	5,194	4,301	-17.2
Light Trucks	11,477	9,870	-14.0
Medium Trucks	1,092	664	-39.2
Heavy Trucks	4,284	4,174	-2.6
Buses	330	306	-7.3
Special Vehicles	1,555	1,523	-2.1
Unknown	494	975	
Total	63,485	55,099	-13.2

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From 1980 to 1983, heavy truck occupant fatalities dropped 17.3 percent. However, fatalities in accidents involving large trucks dropped only 1.8 percent. The decreases in large truck occupant fatalities were largely off-set by a 2.2 percent increase in deaths of people in other vehicles that were involved in collisions with large trucks, and an increase in large truck-related non-occupant deaths of 2.1 percent (Table I-10).

The passenger car occupant fatality reduction was considerably larger for single vehicle accidents (21.7 percent) than for those involving two or more vehicles (11.1 percent). Differences also exist among the various multi-vehicle accident types: head-on accidents show a larger reduction (13.7 percent) than the remaining types (Table I-11).

TABLE I-10
TRAFFIC FATALITIES INVOLVING LARGE TRUCKS*
1980-1983

	Large Truck Occupants				
	Single Vehicle Accidents	Multi-Vehicle Accidents	Other Vehicle Occupants	Non-Occupants	Total
1980	671	305	3,379	466	4,821
1983	545	262	3,452	476	4,735
% Change	-18.8	-14.1	+2.2	+2.1	-1.8

* Trucks of 26,000 lbs. Gross Vehicle Weight or more.

TABLE I-11
PASSENGER CAR OCCUPANT FATALITIES BY VEHICLE SIZE AND ACCIDENT TYPE
1980-1983

	Multi-vehicle Accidents							
	Rear End	Head On	Angle	Side Swipe	Other & Unknown	Sub-Total	Single Vehicle Accidents	Total
Small Subcompact								
1980	311	1,350	995	99	103	2,858	2,136	4,994
1983	321	1,380	993	118	91	2,903	2,009	4,912
% Change	+3.2	+2.2	-0.2	+19.2	-11.7	+1.6	-5.9	-1.6
Subcompact								
1980	113	622	467	51	43	1,296	1,210	2,506
1983	136	684	512	50	49	1,431	1,274	2,705
% Change	+20.4	+10.0	+9.6	-2.0	+14.0	+10.4	+5.3	+7.9
Compact								
1980	296	1,427	1,207	129	99	3,158	3,134	6,292
1983	314	1,319	1,279	117	99	3,128	2,486	5,614
% Change	+6.1	-7.6	+6.0	-9.3	+0.0	-0.9	-20.7	-10.8
Intermediate								
1980	241	1,451	1,167	101	92	3,052	3,208	6,260
1983	213	983	929	76	69	2,270	2,278	4,548
% Change	-11.6	-32.3	-20.4	-24.8	-24.2	-25.6	-29.0	-27.3
Full Size								
1980	157	670	685	58	45	1,615	1,839	3,454
1983	81	439	451	33	32	1,036	1,047	2,083
% Change	-48.4	-34.5	-34.2	-43.1	-28.9	-35.9	-43.1	-39.7
Other & Unknown								
1980	191	819	782	62	81	1,935	2,008	3,943
1983	154	667	675	52	56	1,604	1,509	3,113
Total								
1980	1,309	6,339	5,303	500	463	13,914	13,535	27,449
1983	1,219	5,472	4,839	446	396	12,372	10,603	22,975
% Change	-6.9	-13.7	-8.7	-10.8	-14.5	-11.1	-21.7	-16.3

Most of the reduction occurred in larger cars, for both accident types. This reduction, and the simultaneous rise in small car occupant fatalities, may reflect a shift in the vehicle population away from larger automobiles toward subcompact and small subcompact cars. In collisions with other vehicles, fatalities among occupants of subcompact and smaller cars increased 4.3 percent. This was offset by large decreases in intermediate and large car occupant fatalities in multi-vehicle crashes. However, the decrease in single vehicle accidents was even stronger, driven by large decreases in compact and larger car fatalities in such accidents.

LOCATION

The reduction of fatalities from 1980 to 1983 in urban areas was slightly greater than in rural areas (16.4 vs. 15.9 percent, Table I-12). The reduction in multi-vehicle accident occupant fatalities was also slightly greater in urban areas than in rural areas (13.5 vs. 13 percent, Table I-13). The difference in occupant fatalities between urban and rural areas was also small for single-vehicle accidents (20.9 vs. 18.7 percent, Table I-14) and in nonoccupant fatalities (14.7 vs 14.5 percent, Table I-15) The reduction was not uniform on all types of highways. Interstate highways, which are generally the safest, experienced the smallest reduction, followed by non Federal-Aid highways, Federal-Aid Primary and Federal-Aid Urban Arterial highways, and Federal-Aid Secondary and Federal-Aid Urban Collector highways in that order. The greatest reduction occurred where the posted speed limit was between 5 and 25 mph (19.9 percent). The reduction on highways with a 55 mph posted speed was only 9 percent (Table I-17).

TABLE I-12
FATALITIES BY ROAD TYPE AND LAND USE
1980-1983

	Urban	Rural	Total
Interstate			
1980	2,066	2,317	4,383
1983	1,878	2,151	4,029
% Change	-9.1	-7.2	-8.0
Other Federal-Aid Primary			
1980	11,767	11,911	23,678
1983	10,356	9,995	20,351
% Change	-12.0	-16.1	-14.1
Federal-Aid Secondary			
1980	1,869	7,361	9,230
1983	1,361	6,016	7,377
% Change	-27.2	-18.3	-20.1
Non Federal-Aid			
1980	5,409	6,697	12,106
1983	4,398	6,235	10,633
% Change	-18.7	-6.9	-12.2
Unknown			
1980	449	828	1,277
1983	32	89	121
Total			
1980	**21,560**	**29,114**	**51,091**
1983	**18,025**	**24,486**	**42,584**
% Change	**-16.4**	**-15.9**	**-16.7**

Note: 1980 Total Includes 417 Fatalities with Unknown Land Use.
1983 Total Includes 73 Fatalities with Unknown Land Use.
Percent Change of the Total is greater than
both Urban and Rural due to Unknown Land Use.

For Tables I-12 through I-16:
Other Federal-Aid Primary includes Federal-Aid Urban Arterials,
Federal-Aid Secondary includes Federal-Aid Urban Collectors.

TABLE I-13
OCCUPANT FATALITIES IN MULTI-VEHICLE ACCIDENTS BY ROAD TYPE AND LAND USE
1980-1983

		Urban	Rural	Total
Interstate	1980	720	816	1,536
	1983	709	832	1,541
	% Change	-1.5	2.0	0.3
Other Federal-Aid Primary	1980	5,023	6,331	11,354
	1983	4,640	5,531	10,171
	% Change	-7.6	-12.6	-10.4
Federal-Aid Secondary	1980	731	2,832	3,563
	1983	452	2,395	2,847
	% Change	-38.2	-15.4	-20.1
Non Federal-Aid	1980	1,596	1,619	3,215
	1983	1,301	1,608	2,909
	% Change	-18.5	-0.7	-9.5
Unknown	1980	153	355	508
	1983	10	30	40
Total	**1980**	**8,223**	**11,953**	**20,287**
	1983	**7,112**	**10,396**	**17,545**
	% Change	**-13.5**	**-13.0**	**-13.5**

Note: 1980 Total Includes 111 Occupant Fatalities with Unknown Land Use.
1983 Total Includes 37 Occupant Fatalities with Unknown Land Use.

TABLE I-14
OCCUPANT FATALITIES IN SINGLE VEHICLE ACCIDENTS BY ROAD TYPE AND LAND USE
1980-1983

		Urban	Rural	Total
Interstate	1980	883	1,218	2,101
	1983	761	1,043	1,804
	% Change	-13.8	-14.4	-14.1
Other Federal-Aid Primary	1980	3,427	4,374	7,801
	1983	2,782	3,315	6,097
	% Change	-18.8	-24.4	-21.8
Federal-Aid Secondary	1980	719	3,738	4,457
	1983	531	3,036	3,567
	% Change	-26.1	-18.9	-20.0
Non Federal-Aid	1980	2,226	4,268	6,494
	1983	1,797	3,949	5,746
	% Change	-19.3	-7.5	-11.5
Unknown	1980	183	403	586
	1983	12	45	57
Total	**1980**	**7,438**	**14,001**	**21,640**
	1983	**5,883**	**11,388**	**17,295**
	% Change	**-20.9**	**-18.7**	**-20.1**

Note: 1980 Total Includes 201 Occupant Fatalities with Unknown Land Use.
1983 Total Includes 24 Occupant Fatalities with Unknown Land Use.

TABLE I-15
NONOCCUPANT FATALITIES BY ROAD TYPE AND LAND USE
1980-1983

		Urban	Rural	Total
Interstate	1980	463	283	746
	1983	408	276	684
	% Change	-11.9	-2.5	-8.3
Other Federal-Aid Primary	1980	3,317	1,206	4,523
	1983	2,934	1,149	4,083
	% Change	-11.5	-4.7	-9.7
Federal-Aid Secondary	1980	419	791	1,210
	1983	378	585	963
	% Change	-9.8	-26.0	-20.4
Non Federal-Aid	1980	1,587	810	2,397
	1983	1,300	678	1,978
	% Change	-18.1	-16.3	-16.9
Unknown	1980	113	70	183
	1983	10	14	24
Total	**1980**	**5,899**	**3,160**	**9,164**
	1983	**5,030**	**2,702**	**7,744**
	% Change	**-14.7**	**-14.5**	**-15.5**

Note: 1980 Total Includes 105 Fatalities with Unknown Land Use.
1983 Total Includes 12 Fatalities with Unknown Land Use.
Percent Change of the Total is greater than both Urban and Rural due to Unknown Land Use.

TABLE I-16
FATALITIES BY PERSON'S ROLE AND ROAD TYPE
1980-1983

			Occupants		
		Nonoccupants	Single Vehicle Accidents	Multi-Vehicle Accidents	Total
Interstate	1980	746	2,101	1,536	4,383
	1983	685	1,806	1,542	4,033
	% Change	-8.2	-14.0	0.4	-8.0
Other Federal-Aid Primary	1980	4,523	7,801	11,355	23,679
	1983	4,083	6,097	10,176	20,356
	% Change	-9.7	-21.8	-10.4	-14.0
Federal-Aid Secondary	1980	1,210	4,457	3,563	9,230
	1983	963	3,567	2,847	7,377
	% Change	-20.4	-20.0	-20.1	-20.1
Non Federal-Aid	1980	2,494	6,678	3,313	12,485
	1983	1,979	5,746	2,909	10,634
	% Change	-20.6	-14.0	-12.2	-14.8
Unknown	1980	191	603	520	1,314
	1983	34	79	71	184
Total	1980	9,164	21,640	20,287	51,091
	1983	7,744	17,295	17,545	42,584
	% Change	-15.5	-20.1	-13.5	-16.7

TABLE I-17
FATAL ACCIDENTS BY TYPE AND POSTED SPEED LIMIT
1980-1983

		5 to 25	30 to 35	40 to 45	50	55	Unknown	Total
Nonoccupant	1980	943	2,416	1,162	361	2,079	1,051	8,171
	1983	782	2,417	1,423	345	2,361	402	7,730
	% Change	-17.1	+0.3	+22.5	-4.4	+13.6		-5.4
Single Vehicle	1980	1,246	3,367	2,321	1.039	9,985	2,043	19,981
	1983	1,000	2,762	1,994	757	8,599	692	15,784
	% Change	-19.7	-18.0	-14.1	-27.1	-13.9		-21.0
Rear End	1980	47	252	303	143	1,202	153	2,100
	1983	33	180	305	109	1,124	46	1,797
	% Change	-29.8	-28.6	+0.7	-23.8	-6.5		-14.4
Head On	1980	128	687	976	415	3,624		6,449
	1983	124	601	924	362	3,289	147	5,447
	% Change	-3.1	-12.5	-5.3	-12.8	-9.2		-15.5
Angle	1980	425	1,577	1,254	388	2,619	686	6,949
	1983	316	1,372	1,301	388	2,496	172	6,045
	% Change	-25.6	-13.0	+3.7	0.0	-4.7		-13.0
Other & Unknown	1980	76	236	227	89	843	136	1,638
	1983	39	181	182	82	650	34	1,168
Total	1980	2,865	8,537	6,256	2,431	20,352	4,853	45,284
	1983	2,294	7,493	6,129	2,043	18,519	1,493	37,971
	% Change	-19.9	-12.1	-2.0	-16.0	-9.0		-16.1

DAY AND TIME

With the exception of Saturday and Sunday, which had reductions of 18.8 percent and 20.2 percent respectively, the changes in fatal accidents between 1980 and 1983 vary only slightly among all other days of the week. However, changes by time of day show large differences (Table I-18). The reduction in fatalities between the three years ranges from 5.9 percent during the middle of the day to 24.1 percent during late night hours. Evening hours show an above average fatality reduction of 17.2 percent (Table I-19 and Figure I-5).

Further selected comparisons between 1983 and previous years are in Chapters III and IX.

TABLE I-18
FATAL ACCIDENTS BY DAY OF WEEK AND HOUR OF DAY
1980-1983

	10 p.m. to 2 a.m.	2 a.m. to 6 a.m.	6 a.m. to 10 a.m.	10 a.m. to 2 p.m.	2 p.m. to 6 p.m.	6 p.m. to 10 p.m.	Unknown	Total
Sunday								
1980	2,168	1,627	422	603	1,131	1,451	41	7,443
1983	1,503	1,215	405	541	968	1,243	65	5,940
% Change	-30.7	-25.3	-4.0	-10.2	-14.4	-14.3		-20.2
Monday								
1980	957	389	571	661	1,156	1,128	36	4,898
1983	772	361	517	579	988	963	24	4,204
% Change	-19.3	-7.2	-9.5	-12.4	-14.5	-14.6		-14.1
Tuesday								
1980	1,024	504	569	656	1,023	1,110	29	4,915
1983	824	382	513	672	992	952	15	4,350
% Change	-19.5	-24.2	-9.8	+2.4	-3.0	-14.2		-11.5
Wednesday								
1980	1,167	491	609	668	1,095	1,203	24	5,257
1983	879	385	562	608	983	1,022	22	4,461
% Change	-24.7	-21.6	-7.7	-9.0	-10.2	-15.0		-15.1
Thursday								
1980	1,346	612	560	694	1,146	1,254	35	5,647
1983	1,023	486	532	682	1,033	1,107	22	4,885
% Change	-24.0	-20.6	-5.0	-1.7	-9.9	-11.7		-13.5
Friday								
1980	2,061	749	599	742	1,341	1,944	26	7,462
1983	1,686	619	574	708	1,181	1,479	31	6,278
% Change	-18.2	-17.4	-4.2	-4.6	-11.9	-23.9		-15.9
Saturday								
1980	2,903	2,009	568	802	1,402	1,924	54	9,662
1983	2,240	1,543	538	711	1,150	1,608	55	7,845
% Change	-22.8	-23.2	-5.3	-11.3	-18.0	-16.4		-18.8
Total								
1980	11,626	6,381	3,898	4,826	8,294	10,014	245	45,284
1983	8,927	4,991	3,641	4,501	7,295	8,374	234	37,971
% Change	-23.2	-21.8	-6.6	-6.7	-12.0	-16.4		-16.2

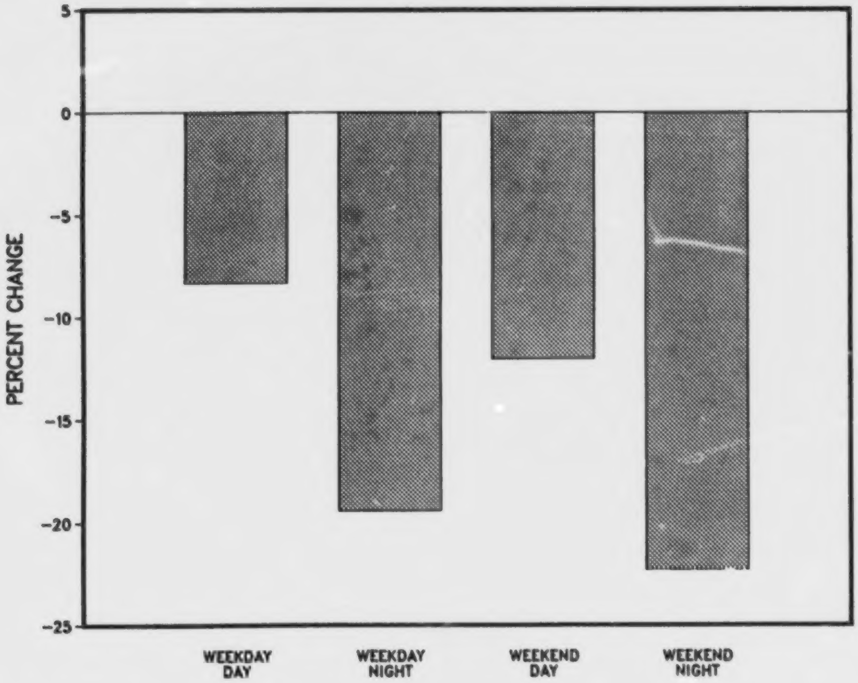
Note: 1983 Total Includes 8 Fatal Accidents with Unknown Day of Week.

TABLE I-19
FATALITIES BY DAY OF WEEK AND HOUR OF DAY
1980-1983

	10 p.m. to 2 a.m.	2 a.m. to 6 a.m.	6 a.m. to 10 a.m.	10 a.m. to 2 p.m.	2 p.m. to 6 p.m.	6 p.m. to 10 p.m.	Unknown	Total
Sunday								
1980	2,499	1,873	485	695	1,304	1,656	43	8,555
1983	1,712	1,351	464	627	1,122	1,462	75	6,813
% Change	-31.5	-27.9	-4.3	-9.8	-14.0	-11.7		-20.3
Monday								
1980	1,076	449	629	743	1,278	1,287	36	5,498
1983	862	397	568	641	1,102	1,061	25	4,656
% Change	-19.9	-11.6	-9.7	-13.7	-13.8	-17.6		-15.3
Tuesday								
1980	1,156	573	613	713	1,132	1,216	29	5,432
1983	895	425	551	733	1,089	1,053	15	4,761
% Change	-22.6	-25.8	-10.1	+2.8	-3.8	-13.4		-12.3
Wednesday								
1980	1,292	554	681	738	1,221	1,337	25	5,848
1983	990	440	626	671	1,098	1,108	22	4,955
% Change	-23.4	-20.6	-8.1	-9.1	-10.1	-17.2		-15.3
Thursday								
1980	1,539	663	622	770	1,271	1,400	39	6,304
1983	1,123	539	590	773	1,154	1,212	22	5,413
% Change	-27.0	-18.7	-5.1	+0.4	-9.2	-13.4		-14.1
Friday								
1980	2,311	842	667	819	1,555	2,193	28	8,415
1983	1,876	682	631	810	1,294	1,642	37	6,972
% Change	-18.8	-19.0	-5.4	-1.1	-16.8	-25.1		-17.1
Saturday								
1980	3,359	2,240	646	903	1,602	2,233	56	11,039
1983	2,578	1,783	608	809	1,331	1,835	61	9,005
% Change	-23.3	-20.4	-5.9	-10.4	-16.9	-17.8		-18.4
Total								
1980	13,232	7,194	3,343	5,381	9,363	11,322	256	51,091
1983	10,036	5,617	4,038	5,064	8,190	9,373	257	42,584
% Change	-24.1	-21.9	-7.0	-5.9	-12.5	-17.2		-16.7

Note: 1983 Total Includes 9 Fatalities with Unknown Day of Week.

FIGURE I-5
CHANGES IN TRAFFIC FATALITIES BY TIME OF DAY AND WEEK
1980-1983



* "Weekday" - 6 a.m. Monday through 5:59 p.m. Friday.
"Weekend" - 6 p.m. Friday through 5:59 a.m. Monday.
"Day" - 6 a.m. through 5:59 p.m.
"Night" - 6 p.m. through 5:59 a.m.

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II. Alcohol and Safety Belts

The use of alcohol and failure to use safety belts are two major contributing factors to deaths from motor vehicle accidents. In 1983 alcohol was reported in 55 percent of the fatal accidents. This translates to approximately 23,500 fatalities. Only about 748 (3.3 percent) of all passenger car occupants who died were reported to have been wearing a restraint. Efforts to decrease drunken driving and to increase the use of safety belts and other occupant restraints are NHTSA priorities.

ALCOHOL

Drivers

During 1983, 46.2 percent of the fatally injured drivers in the 15 States with long-term complete testing on alcohol were at legally intoxicating blood alcohol levels.* An additional 10.4 percent were impaired or had some alcohol in their blood system at the time of their crash which means that almost three out of every five fatally injured drivers (56.6 percent) had been drinking (Table II-1).

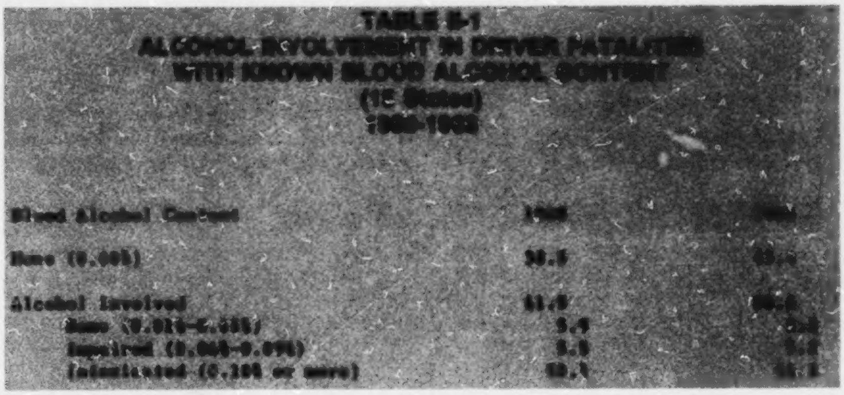


TABLE II-1
ALCOHOL INVOLVEMENT IN DRIVER FATALITIES
WITH KNOWN BLOOD ALCOHOL CONTENT
(15 States)
[illegible]

Blood Alcohol Content	[illegible]	[illegible]
None (0.00%)	38.5	[illegible]
Alcohol Involved	[illegible]	[illegible]
Some (0.01%-0.05%)	5.4	[illegible]
Impaired (0.06%-0.09%)	[illegible]	[illegible]
Intoxicated (0.10% or more)	[illegible]	[illegible]

---

*The data in this section are based on information gathered in fifteen states (California, Colorado, Delaware, District of Columbia, Hawaii, Nevada, New Hampshire, New Jersey, New Mexico, Oregon, Rhode Island, Vermont, Virginia, Washington and Wisconsin) that routinely test fatally injured drivers for the presence of alcohol. Legally intoxicating blood alcohol levels are 0.10 percent in most states.

Eighty to ninety percent of all fatally injured drivers in those states were tested. Generally, tests are not performed on drivers who died more than four hours after their accident, received blood transfusions or had other factors that would invalidate the results of tests to detect the presence or concentration of alcohol in their blood. The drivers tested and the states that routinely conduct those tests appear to provide an unbiased sample which can be used to make reasonably sound national estimates.

There are some indications that serious accidents associated with drunk driving may be decreasing. In 1980, the percent of fatally injured drivers in these 15 states who were legally intoxicated was 50.1 percent. While driver fatalities dropped about 16 percent between 1980 and 1983, the number of fatally injured drivers who were intoxicated in those states dropped about 23 percent in the same period.

People who were driving certain vehicles were more likely to have been drinking than people who were driving other vehicle types. For instance, when fatally injured drivers of medium trucks were tested, they were much less likely to have been drinking than fatally injured automobile drivers or motorcyclists (Table II-2). Fatally injured pedestrians who had been drinking had, on average, higher alcohol concentration in their blood than drivers who had been drinking.

TABLE II-2
ALCOHOL INVOLVEMENT BY VEHICLE BODY TYPES
1983

	Passenger Cars	Motor-cycles	Light Trucks	Medium Trucks	Heavy Trucks	Other Vehicles	Other Non-occupant	Pedes-trians	Pedal-cyclists	Total
Number of Accidents in which one or more Vehicles/Persons of this Type were Involved	28,698	4,293	9,324	657	3,960	2,766	174	6,752	844	45,284
Number of Fatally Injured Persons[1]	22,975	4,284	5,379	166	806	1,250	81	6,824	839	42,584
16 and Under	1,080	134	279	10	22	75	19	1,077	400	3,086
Over 16 Years Old	21,830	4,134	5,059	255	781	1,171	61	5,643	435	39,307
THE FOLLOWING IS BASED ON DATA FROM THE 15 STATES THAT ROUTINELY TEST FATALITIES										
Percent of Accidents with any Alcohol Involvement[2]	54.6	59.7	55.1	28.0	31.9	54.6	56.3	48.5	29.9	55.5
Percent of Tested Fatally Injured Drivers/Pedestrians[3]										
Alcohol Involved[4]	55.5	59.7	62.6	25.0	17.9	65.9	N/A	49.2	25.2	54.6
Impaired[5]	51.3	53.6	59.5	25.0	13.7	62.4	N/A	45.8	22.3	50.5
Intoxicated[6]	46.2	45.2	55.3	25.0	12.8	56.6	N/A	40.4	19.4	44.6

[1] 191 Persons with Unknown Age are included in these totals.
[2] Either a positive alcohol test result or an indication from police of any alcohol involvement.
[3] Pedestrians and pedalcyclists over fourteen only.
[4] Blood Alcohol Content at least 0.01%.
[5] Blood Alcohol Content at least 0.05%.
[6] Blood Alcohol Content at least 0.10%.

When nonoccupants were killed in fatal accidents, they were two times as likely to have been drinking than the involved drivers (Table II-3).

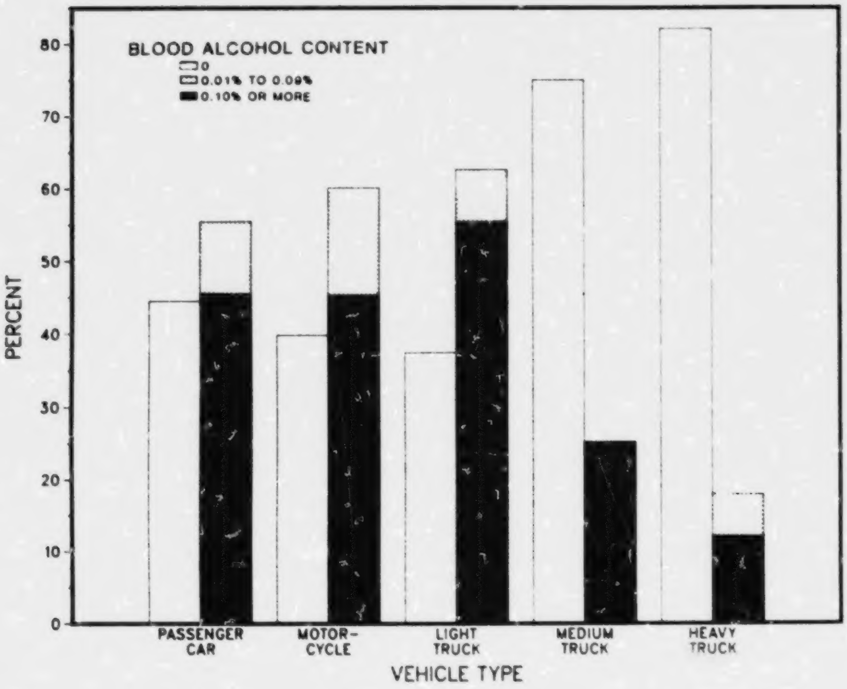
Fatally injured light truck drivers, on average, had been drinking more heavily than other fatally injured drivers (Figure II-1).

TABLE II-3
DRINKING INVOLVEMENT IN FATAL NONOCCUPANT* ACCIDENTS
(15 States)
1983

	Percent
No Alcohol Involvement	**46.4**
Some Alcohol Involvement	**53.6**
Nonoccupant Alcohol Involved	**32.6**
Driver Alcohol Involved	**10.2**
Both Alcohol Involved	**10.8**

*** For Nonoccupants over 15 only.**

FIGURE II-1
ALCOHOL TEST RESULTS OF FATALLY INJURED DRIVERS
BY VEHICLE TYPE
(15 States)



The vast majority of fatally injured drivers, whether they had been drinking or not, held valid licenses. In 1980 drivers in fatal accidents which were reported to have alcohol involvement were almost twice as likely to have an invalid license than those involved in accidents where no presence of alcohol was reported. In 1983, drivers involved in accidents where alcohol was reported were more than twice as likely to have been driving without a valid license than those in accidents where alcohol was not involved. (Table II-4).

Restraint Use

The presence of alcohol also was associated with a lower rate of safety belt use. Although few drivers who were involved in fatal accidents (5.2 percent) were wearing safety belts when they were sober, drivers who had been drinking were virtually never (1.6 percent) wearing safety belts. Between 1980 and 1983, the belt wearing rate among alcohol involved drivers in fatal crashes remained unchanged (1.6 percent), while the incidence of belt use among other drivers in fatal accidents increased from 3.8 percent to 5.2 percent (Table II-5).

TABLE II-4
DRIVERS INVOLVED IN FATAL ACCIDENTS BY LICENSE STATUS AND ALCOHOL INVOLVEMENT
(All States)

	Not Alcohol Involved		Alcohol Involved	
	1980	1983	1980	1983
Invalid License	7.8	7.0	14.1	16.0
Valid License	90.5	88.9	83.9	82.0
Unknown	1.7	4.1	2.0	2.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

TABLE II-5
RESTRAINT USAGE FOR ALCOHOL INVOLVED AND OTHER DRIVERS
(All States)

	Percent Restrained[1]	
	1980	1983
Alcohol Involved Drivers	1.6	1.6
Other Drivers[2]	3.8	5.2

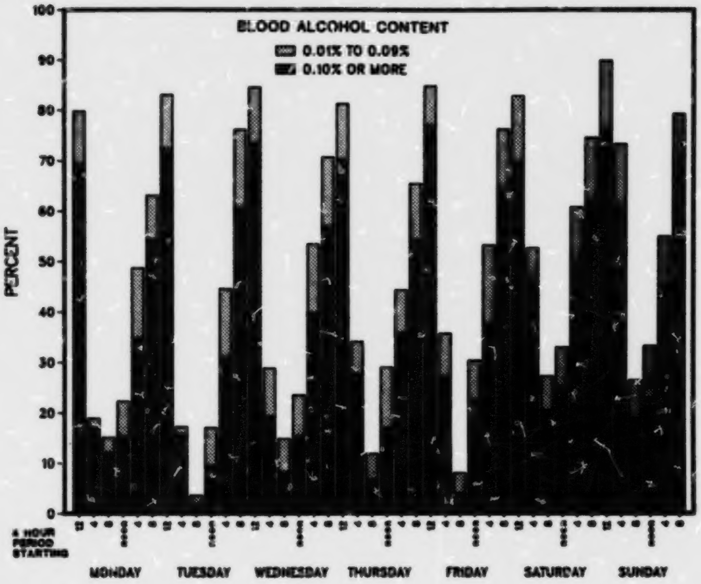
[1] Includes only drivers with known restraint usage. Unknown restraint usage varies by file, by year and by State. Unknowns were included in the not restrained group.

[2] Includes drivers of unknown alcohol involvement.

Day and Time

The pattern of alcohol involvement in fatal crashes was fairly consistent throughout the week. On any day of the week the lowest incidence of alcohol involvement was between dawn and noon. It then increased until it peaked during late night and early morning hours. Relatively few accidents that occurred between dawn and noon during the week involved alcohol. This changed on weekends when the incidence of alcohol involvement did not drop below 25 percent. Alcohol involvement is noticeably higher in the 4 a.m. to noon time period on weekends compared to weekdays. Although the greatest proportion of alcohol involvement among fatally injured drivers occurred in weekend accidents, the incidence of alcohol involvement varied only about ten percent in crashes that occurred during late night and early morning hours on any night of the week. During that period (Midnight to 4 a.m.) on any night of the week between 80 percent and 90 percent of all fatally injured drivers had been drinking. At least 70 percent of those drivers had been drinking heavily enough to be considered legally intoxicated (Figure II-2).

FIGURE II-2
ALCOHOL TEST RESULTS OF FATALLY INJURED DRIVERS BY TIME AND DAY
(15 States)

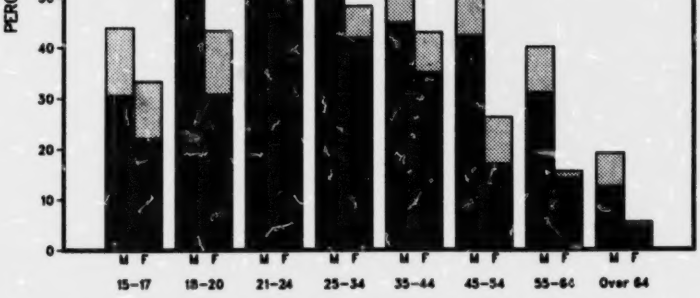


Age

The vast majority of drivers in all age groups who had been drinking were legally intoxicated (Figure II-3).

Females in every age group had a lower rate of drunken driving. However, in most age groups, fatally injured women drivers who had been drinking were more likely to have been drinking more heavily than men. This was especially true for those over age 55.

FIGURE II-3
ALCOHOL TEST RESULTS OF FATALLY INJURED DRIVERS BY AGE AND SEX
(15 States)



NOTE: 1 FATALLY INJURED DRIVER OF UNKNOWN AGE

The vast majority of the fatally injured pedestrians in the 15 states who had been drinking were drinking heavily. More than half of the fatally injured pedestrians between 18 and 54 had been drinking (Figure II-4).

Figure II-5 shows the number of fatally injured drivers and surviving drivers tested for alcohol in all states. This indicates why a 15 state sample is used to make alcohol involvement estimates.

SAFETY BELTS

Few Americans take advantage of the lifesaving and injury reduction potential of safety belts. Only 4.7 percent of the 57,474 automobile occupants involved in fatal accidents were reported to have been wearing safety belts or other restraints.

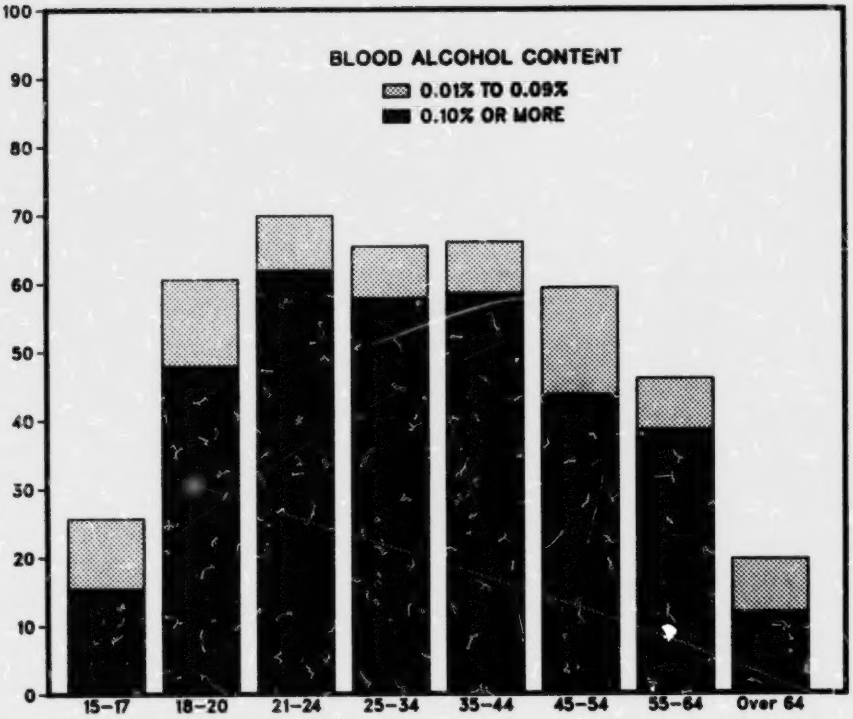
Automatic Safety Belts

An exception to the low safety belt use rate occurred in cars equipped with automatic safety belts. Studies of safety belt use in traffic have observed that people with automatic belts wear them more frequently than people who have standard belt systems. Occupant fatality rates for cars with automatic belts are substantially lower than for similar cars with standard belts.

FARS data for 1981-1983 show that Toyota Cressidas with automatic belts had half the fatality rate of Datsun Maxima 810s, which have standard safety belts.* The cars are similar in size, weight and in most other respects. Studies of safety belt use in traffic have observed automatic belt use of 96 percent in Toyota Cressidas. Automatic belt systems of somewhat different design are available in some Volkswagen Rabbits and Chevrolet Chevettes. Observed use rates in those models are lower (75 percent and 67 percent respectively) than the use rate in the Cressida.**

Although the observed safety belt use rate in Rabbits with automatic belts is not as high as in the Cressidas, analysis of FARS data for the last eight years shows that the fatality rate in Volkswagen Rabbits with automatic belts is significantly lower than in Rabbits with manual safety belts.***

FIGURE II-4
PEDESTRIAN FATALITIES WITH KNOWN ALCOHOL TEST RESULTS BY AGE



NOTE: 40 PEDESTRIAN FATALITIES OF UNKNOWN AGE

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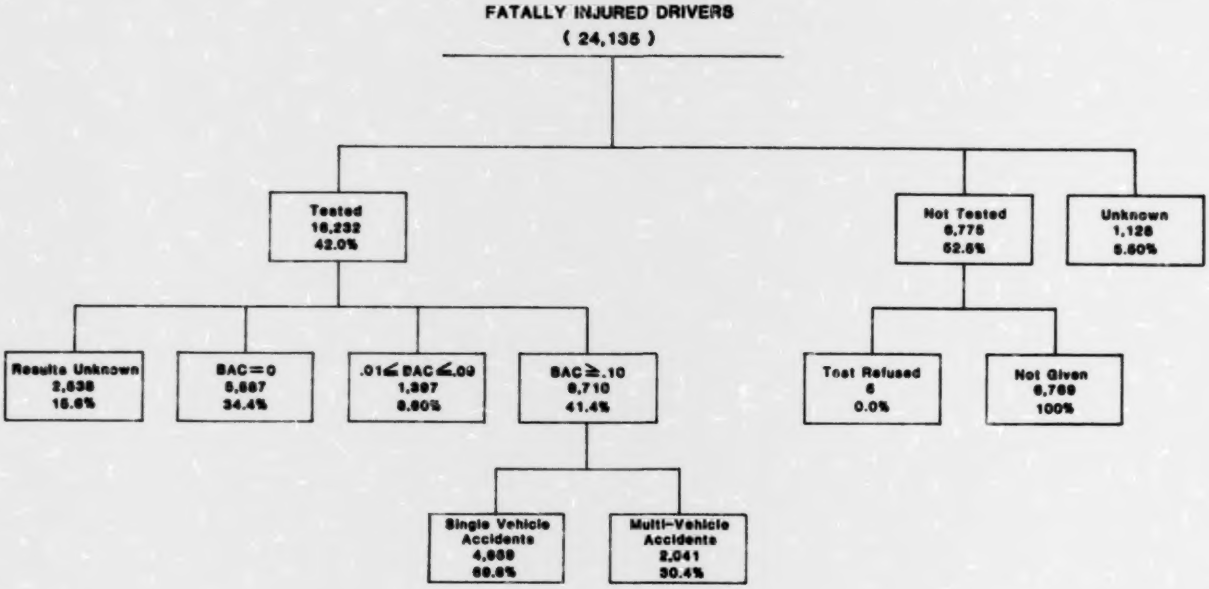
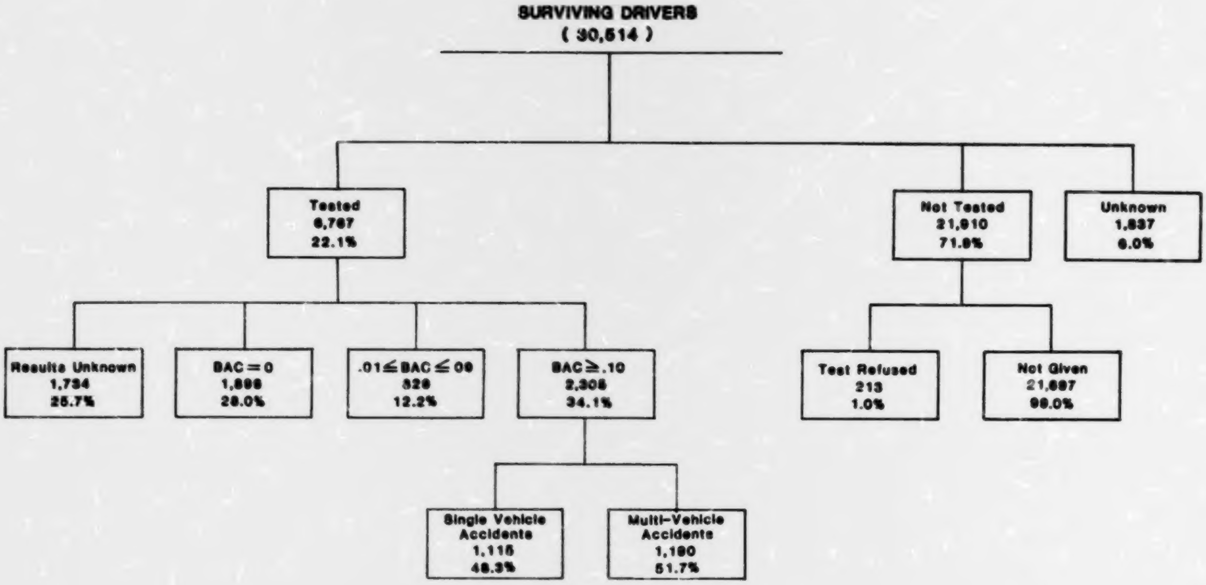
*"Fatality Rates in Toyota Cressidas with Automatic Belts," C.E. Nash and B. Eisemann, NHTSA Research Notes, October 1984.

**Restraint System Useage in the Traffic Population, DOT HS-806-582, July 1984.

***"Final Regulatory Impact Analysis", Report No. DOT-HS-806-572, July 1984.

FIGURE II-5
ALCOHOL TEST RESULTS OF DRIVERS INVOLVED IN FATAL ACCIDENTS





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Even though cars with automatic belt systems clearly have higher belt use rates, of the 22 people involved in fatal accidents whose cars had automatic belt systems, almost half (eight drivers and two passengers) had taken active measures to circumvent those systems. Of the 17 who were killed, 7 were not using their automatic belts.**

Manual Safety Belts

A comparison of restraint use by fatally injured occupants with restraint use by occupants who were in fatal crashes, but not killed (Table II-6 and Table II-7) reveals:

- The frequency of seat belt use (6.1 percent) among passenger car occupants who survived fatal accidents was more than 85 percent higher than for occupants who were fatally injured in those accidents (3.3 percent).
- There was a use rate of more than 26 percent for children under 5 who survived fatal accidents compared to about 16 percent for those who were fatally injured.
- A lap and shoulder belt use rate among surviving drivers in fatal accidents that was more than twice that of fatally injured drivers.
- Automobile drivers in fatal accidents were more likely than passengers to have been wearing safety belts.

These comparisons, along with other studies, dramatically illustrate the life saving potential of safety belts and child restraints--if they are used.

TABLE II-6
RESTRAINT USED BY PASSENGER CAR OCCUPANTS
1983
(57,474)

	Drivers		Passengers		Unknown Occupants		Total	
	Number	%	Number	%	Number	%	Number	%
Restraint Used	1,826	5.5	894	3.7			2,720	4.7
Shoulder Belt	65	0.2	41	0.2			106	0.2
Lap Belt	319	1.0	289	1.2			608	1.1
Lap & Shoulder Belt	987	3.0	444	1.8			1,431	2.5
Child Safety Seat			293	1.2			293	0.5
Unknown Manual Restraint	155	0.5	115	0.5			270	0.5
Automatic Belt Used	7	0.0	5	0.0			12	0.0
Automatic Belt not Used	8	0.0	2	0.0			10	0.0
None Used	23,582	71.3	17,988	74.0	69	63.9	41,639	72.5
Unknown	7,936	24.0	5,130	21.1	39	36.1	13,105	22.8
Total	33,059	100.0	24,307	100.0	108	100.0	57,474	100.0

Note: No Passenger Cars equipped with Airbags were involved in Fatal Accidents in 1983.

**It is possible to infer from observational studies of safety belt use that, depending on the make of car and design of the automatic belt system, as many as 33 percent of the people whose cars have automatic safety belt systems take steps to avoid wearing those belts.

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The advantages of wearing safety belts become even more apparent when the injuries of those involved in fatal accidents who were wearing them are compared to the injuries of those who were not. People wearing safety belts were more likely to escape injury and much less likely to receive incapacitating or fatal injuries. In fact, those who survived with no injuries were twice as likely to have been restrained as those who were killed (Figure II-6 and Table II-8).

TABLE II-7
RESTRAINT USED BY FATALLY INJURED PASSENGER CAR OCCUPANTS
1983
(22,975)

	Driver		Passenger		Unknown		Total	
	Number	%	Number	%	Number	%	Number	%
Restraint Used	453	3.0	295	3.8			748	3.3
Shoulder Belt	24	0.2	9	0.1			33	0.1
Lap Belt	88	0.6	67	0.9			155	0.7
Lap & Shoulder Belt	200	1.3	128	1.7			408	1.8
Child Safety Seat			56	0.7			56	0.2
Unknown Manual Restraint	55	0.4	31	0.4			86	0.4
Automatic Belt Used	6	0.0	4	0.1			10	0.0
Automatic Belt not Used	6	0.0	1	0.0			7	0.0
None Used	11,626	76.6	5,988	77.5	46	66.7	17,660	76.9
Unknown	3,095	20.4	1,442	18.7	23	33.3	4,560	19.8
Total	15,180	100.0	7,726	100.0	69	100.0	22,975	100.0

Note: No Passenger Cars equipped with Airbags were involved in Fatal Accidents in 1983.

FIGURE II-6
INJURY SEVERITY OF PASSENGER CAR OCCUPANTS IN FATAL ACCIDENTS
(57,474)

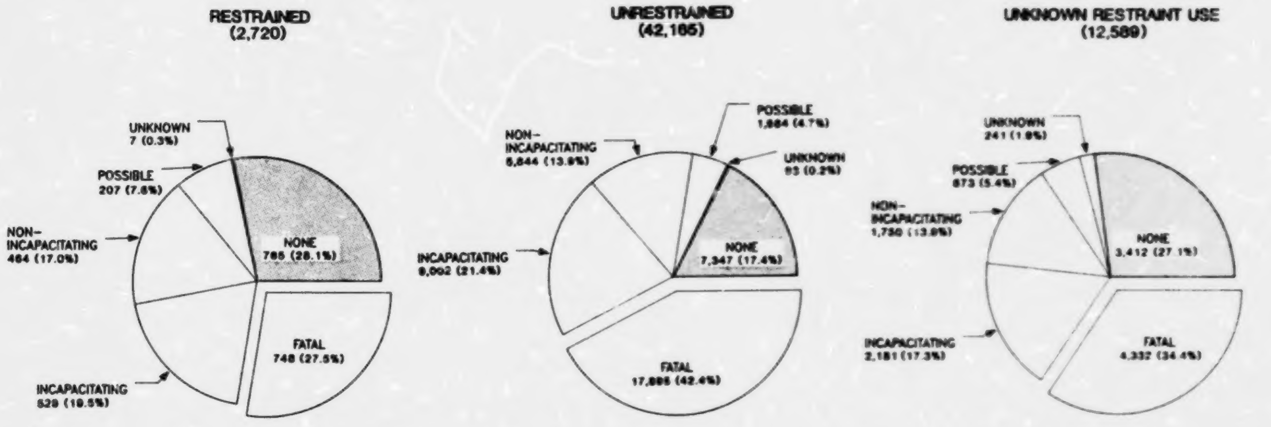

TABLE II-8
INJURY SEVERITY AND RESTRAINT USE BY PASSENGER CAR OCCUPANTS
1983
(57,474)

	Restraint Used		No Restraint Used		Unknown		Total	
	Number	%	Number	%	Number	%	Number	%
Fatalities	748	3.3	17,895	77.9	4,332	18.9	22,975	100.0
Drivers	453	3.0	11,792	77.7	2,935	19.3	15,180	100.0
Passengers	295	3.8	6,057	78.4	1,374	17.8	7,726	100.0
Unknown Occupants			46	66.7	23	33.3	69	100.0
Incapacitating Injury	529	4.5	9,002	76.9	2,181	18.6	11,712	100.0
Drivers	264	5.3	3,767	75.0	990	19.7	5,021	100.0
Passengers	265	4.0	5,216	78.3	1,182	17.7	6,663	100.0
Unknown Occupants			19	67.9	9	32.1	28	100.0
Nonincapacitating Injury	464	5.8	5,844	72.5	1,750	21.7	8,058	100.0
Drivers	226	6.0	2,663	71.1	858	22.9	3,747	100.0
Passengers	238	5.5	3,178	73.9	888	20.6	4,304	100.0
Unknown Occupants			3	42.9	4	57.1	7	100.0
Possible Injury	207	7.2	1,984	69.3	673	23.5	2,864	100.0
Drivers	106	7.7	937	68.5	326	23.8	1,369	100.0
Passengers	101	6.8	1,046	70.1	346	23.2	1,493	100.0
Unknown Occupants			1	50.0	1	50.0	2	100.0
No Injury	765	6.6	7,347	63.8	3,412	29.6	11,524	100.0
Drivers	482	6.4	4,719	62.8	2,318	30.8	7,519	100.0
Passengers	283	7.1	2,628	65.7	1,093	27.3	4,004	100.0
Unknown Occupants					1	100.0	1	100.0
Unknown	7	2.1	93	27.3	241	70.7	341	100.0
Drivers	2	0.9	39	17.5	182	81.6	223	100.0
Passengers	5	4.3	54	46.2	58	49.6	117	100.0
Unknown Occupants					1	100.0	1	100.0
Total	2,720	4.7	42,165	73.4	12,589	21.9	57,474	100.0

Between 1980 and 1983 restraint use among infants involved in fatal accidents increased almost 300 percent, an unprecedented increase attributable to child restraint laws passed in most states. Although such laws do not apply to older children, restraint use among those between five and fourteen involved in fatal accidents more than doubled, perhaps a residual effect of the laws (Table II-9).

The increase in child restraint use was accompanied by a drop in deaths and injuries. From 1980 to 1983, the number of fatally injured children under five decreased by 7.5 percent. The number of children who escaped injury in fatal crashes rose by a dramatic 44.2 percent (Table II-10).

TABLE II-9
PASSENGER CAR OCCUPANT RESTRAINT USE BY AGE
1980-1983

		Under 5	5 to 14	Over 14	Unknown	Total
Restraint Used						
	1980	96	57	1,657	10	1,820
	1983	369	118	2,191	42	2,720
	% Change	+284.4	+107.0	+32.2		+49.5
No Restraint Used						
	1980	1,284	2,493	46,092	472	50,341
	1983	1,192	2,252	38,171	550	42,165
	% Change	-7.2	-9.7	-17.2		-16.2
Unknown						
	1980	311	651	13,680	323	14,965
	1983	275	555	11,119	640	12,589
Total						
	1980	**1,691**	**3,201**	**61,429**	**805**	**67,126**
	1983	**1,836**	**2,925**	**51,481**	**1,232**	**57,474**
	% Change	**+8.6**	**-8.6**	**-16.2**		**-14.4**

TABLE II-10
RESTRAINT USE AND INJURY SEVERITY
FOR PASSENGER CAR OCCUPANTS UNDER 5 YEARS OLD
1980-1983

		Restraint Used	No Restraint Used	Unknown	Total
No Injury					
	1980	25	205	37	267
	1983	110	197	78	385
	% Change	+340.0	-3.9		+44.2
Possible Injury					
	1980	7	106	40	153
	1983	38	95	28	161
	% Change	+442.9	-10.4		+5.2
Nonincapacitating Injury					
	1980	14	239	71	324
	1983	77	226	53	356
	% Change	+450.0	-5.4		+9.9
Incapacitating Injury					
	1980	19	300	73	392
	1983	65	284	70	419
	% Change	+242.1	-5.3		+6.9
Fatal Injury					
	1980	31	431	84	546
	1983	76	387	42	505
	% Change	+145.2	-10.2		-7.5
Unknown					
	1980		3	6	9
	1983	3	3	4	10
Total					
	1980	96	1,284	311	1,691
	1983	369	1,192	275	1,836
	% Change	+284.4	-7.2		+8.5

People who are ejected from their vehicles in an accident lose the protection of the vehicle structure that would otherwise surround them. Their chances of surviving the accident are substantially diminished. Three out of four people who were fully or partially ejected from their cars were killed. People protected by restraints were much less likely to have been thrown from their cars than those who were not protected by restraints. Each of the types of restraint used provided a high degree of protection from ejection. (Table II-11 and Table II-12).

TABLE II-11
EJECTION, IMPACT POINT AND RESTRAINT USE FOR PASSENGER CAR OCCUPANTS
(57,474)

	Not Ejected		Totally Ejected		Partially Ejected		Unknown		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Restraint Used										
Noncollision	104	0.2	6	0.1	2	0.2			112	0.2
Frontal	1,503	3.1	6	0.1	5	0.4	4	0.3	1,518	2.6
Side	675	1.4	13	0.2	4	0.3	3	0.3	695	1.2
Other and Unknown	349	0.7	3	0.1	6	0.5	37	3.2	395	0.7
Subtotal	2,631	5.3	28	0.5	17	1.4	44	3.8	2,720	4.7
No Restraint Used										
Noncollision	1,676	3.4	1,184	20.0	150	12.7	24	2.0	3,034	5.3
Frontal	20,461	41.6	1,630	27.5	383	32.4	55	4.7	22,529	39.2
Side	8,729	17.7	1,068	18.0	276	23.4	41	3.5	10,114	17.6
Other and Unknown	4,498	9.1	976	16.5	207	17.5	807	68.9	6,488	11.3
Subtotal	35,364	71.9	4,858	82.1	1,016	86.0	927	79.2	42,165	73.4
Unknown										
Noncollision	369	0.7	197	3.3	17	1.4	18	1.5	601	1.0
Frontal	6,713	13.6	408	6.9	67	5.7	92	7.9	7,280	12.7
Side	2,708	5.5	267	4.5	49	4.1	65	5.6	3,089	5.4
Other and Unknown	1,418	2.9	160	2.7	16	1.4	25	2.1	1,619	2.8
Subtotal	11,208	22.8	1,032	17.4	149	12.6	200	17.1	12,509	21.9
Total	49,203	100.0	5,918	100.0	1,182	100.0	1,171	100.0	57,474	100.0

TABLE II-12
EJECTION BY RESTRAINT TYPE FOR RESTRAINED PASSENGER CAR OCCUPANTS
(2720)

Type of Restraint Used	Not Ejected	Other & Unknown	Total
Shoulder Belt	96	10	106
Lap Belt	592	16	608
Lap & Shoulder Belt	1,386	45	1,431
Child Safety Seat	282	11	293
Other Manual Restraint	264	6	270
Automatic Belt in Use	11	1	12
Total	2,631	89	2,720

TABLE II-13
NUMBER OF OCCUPANTS BY EJECTION AND VEHICLE TYPE
(85,350)

	Not Ejected		Totally Ejected		Partially Ejected		Unknown		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Passenger Cars	49,203	68.2	5,918	59.5	1,182	69.4	1,171	74.8	57,474	67.3
Light Trucks	13,824	19.2	2,652	26.7	381	22.4	217	13.9	17,074	20.0
Medium Trucks	776	1.1	77	0.8	10	0.6	5	0.3	868	1.0
Heavy Trucks	4,430	6.1	281	2.8	56	3.3	40	2.6	4,807	5.6
Buses	1,050	1.5	43	0.4	5	0.3	1	0.1	1,099	1.3
Special Vehicles	1,879	2.6	913	9.2	60	3.5	54	3.4	2,906	3.4
Unknown	980	1.4	56	0.6	8	0.5	78	5.0	1,122	1.3
Total	**72,142**	**100.0**	**9,940**	**100.0**	**1,702**	**100.0**	**1,566**	**100.0**	**85,350**	**100.0**

Note: 5,313 Motorcycle and Other Motorized Cycle Riders were not included in this table.

TABLE II-14
NUMBER OF OCCUPANT FATALITIES BY EJECTION AND VEHICLE TYPE
(30,576)

	Not Ejected		Totally Ejected		Partially Ejected		Unknown		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Passenger Cars	16,993	73.9	4,371	62.8	975	69.3	636	81.7	22,975	75.1
Light Trucks	3,243	15.1	1,739	25.0	313	22.3	84	10.8	5,379	17.6
Medium Trucks	101	0.5	52	0.7	10	0.7	3	0.4	166	0.5
Heavy Trucks	509	2.4	226	3.2	49	3.5	22	2.8	806	2.6
Buses	37	0.2	14	0.2	2	0.1	0	0.0	53	0.2
Special Vehicles	462	2.2	523	7.5	50	3.6	25	3.2	1,069	3.5
Unknown	86	0.4	36	0.5	7	0.5	8	1.0	137	0.4
Total	**21,431**	**100.0**	**6,961**	**100.0**	**1,406**	**100.0**	**778**	**100.0**	**30,576**	**100.0**

Note: 4,264 Fatally Injured Motorcyle and Other Motorized Cycle Riders were not included in this table.

Restraint use in light trucks, medium trucks, and buses, was lower than in passenger cars. Restraint use in heavy trucks and special vehicles was higher than in passenger cars (Table II-11 and Table II-15).

TABLE II-15
RESTRAINT USE BY VEHICLE TYPE FOR NON PASSENGER CAR OCCUPANTS
(27,861)

	Light Trucks		Medium Trucks		Heavy Trucks		Buses		Special Vehicles		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Restraint Used	374	2.2	30	[illegible]	190	4.1	40	3.0	160	5.6	26	2.1
No Restraint Used	13,277	77.8	613	70.7	3,526	75.8	919	[illegible]	2,176	75.3	439	35.2
Restraint Use Unknown	3,423	20.0	[illegible]	[illegible]	941	[illegible]	[illegible]	[illegible]	552	19.1	782	62.7
Total	17,074	100.0	[illegible]	100.0	4,657	100.0	[illegible]	100.0	2,888	100.0	1,247	100.0

Note: 5,313 Motorcycle and Other Motorized Cycle riders were not included in this table.

TABLE II-16
RESTRAINT USE BY VEHICLE TYPE FOR NON PASSENGER CAR OCCUPANT FATALITIES
([illegible])

	Light Trucks		Medium Trucks		Heavy Trucks		Buses		Special Vehicles		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Restraint Used	57	1.0	1	0.6	16	2.0	0	0.0	40	2.0	5	3.6
No Restraint Used	[illegible]	83.7	130	78.3	645	80.0	11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Restraint Use Unknown	[illegible]	15.3	35	21.1	145	18.0	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	100.0	166	100.0	806	100.0	[illegible]	100.0	[illegible]	100.0	[illegible]	100.0

Note: 4,264 Motorcycle and Other Motorized Cycle rider Fatalities were not included in this table.

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III. Fatality Profile 1983

During 1983, 42,584 men, women, and children died in motor vehicle traffic accidents. That's an average of one traffic fatality every 12.3 minutes throughout the entire year. Although this represents a 3.1 percent decline from the 1982 death toll of 43,945, and a 16.7 percent reduction from 1980, traffic accidents are still one of the major causes of premature death in the United States.

Some characteristics of 1983 fatalities are shown in Figures III-1 through III-4:

- Passenger car occupants, who were more than half of all fatalities, had only 1.5 percent fewer fatalities than in 1982. Pedestrian fatalities, accounting for the second largest share (16 percent), declined 6.9 percent.
- Most people killed in 1983 accidents were drivers--24,135 down 2.3 percent from 1982. Passenger fatalities, the next largest group at nearly one quarter, were down 2.5 percent from 1982.
- Head-on and angle crashes account for 78.3 percent of fatalities in multi-vehicle crashes.
- The most frequent first harmful event in fatal single vehicle accidents, was when a fixed object was hit (48.2 percent).

FIGURE III-1
DISTRIBUTION OF FATALITIES BY ROAD USER
(42,584)

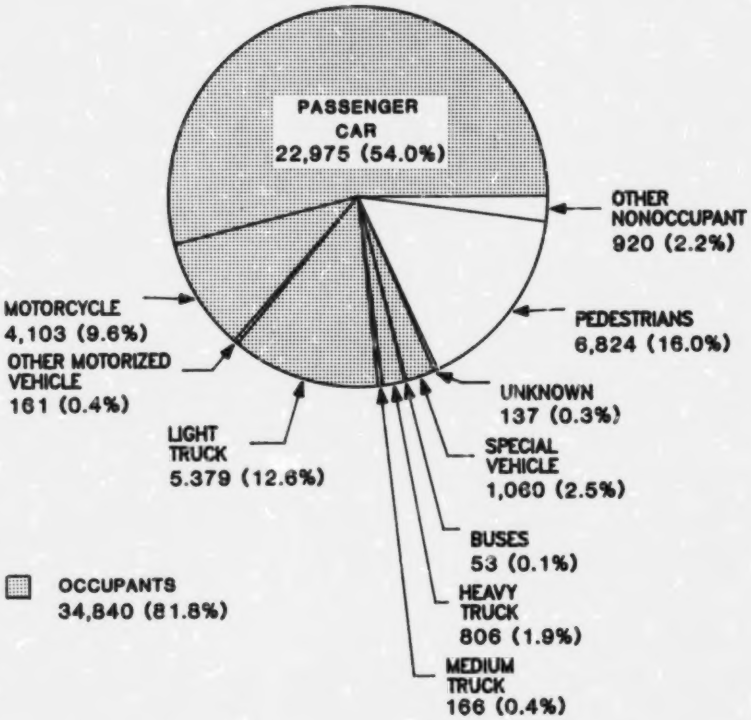


FIGURE III-2
DISTRIBUTION OF FATALITIES
BY PERSON TYPE
(42,584)

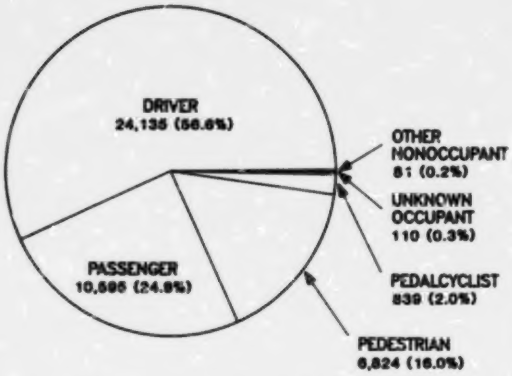


FIGURE III-3
DISTRIBUTION OF FATALITIES BY
FIRST HARMFUL EVENT
SINGLE VEHICLE ACCIDENTS
(24,595)

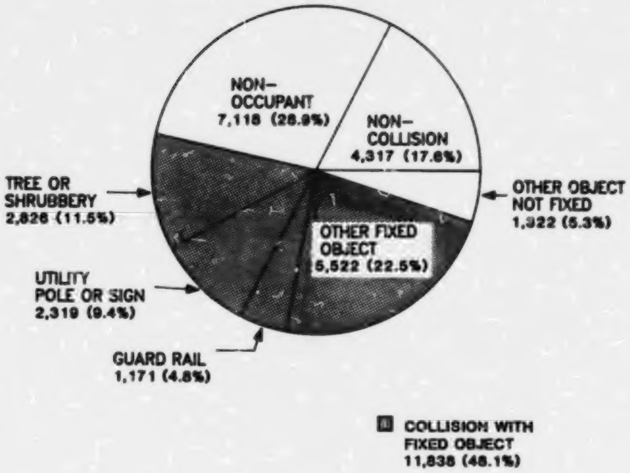
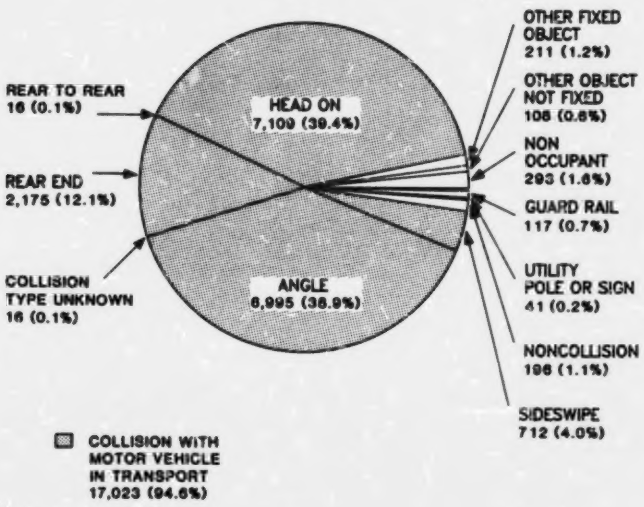


FIGURE III-4
DISTRIBUTION OF FATALITIES BY
FIRST HARMFUL EVENT AND MANNER
OF COLLISION–MULTI-VEHICLE ACCIDENTS
(17,989)



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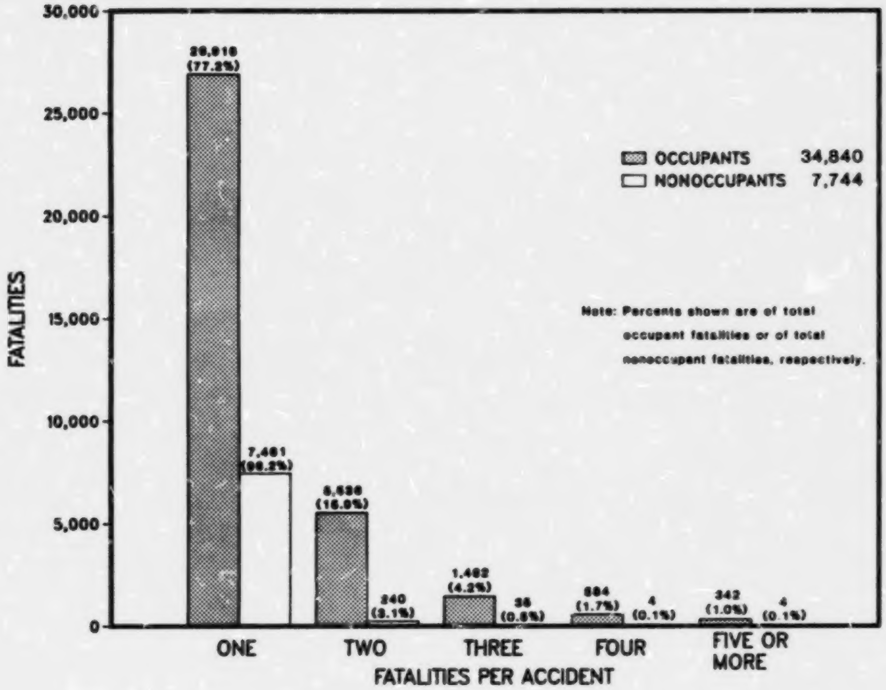
Ninety-one percent of the 37,971 fatal accidents resulted in a single death each (Figure III-5). Accidents in which more than two people were killed claimed only 2,388 (6.9 percent) of all the occupants killed and only 43 (0.6 percent) of all the nonoccupants killed. Overall, an average of 1.1 deaths resulted from each fatal accident.

FIGURE III-5
NUMBER OF FATALITIES PER FATAL ACCIDENT
(42,584)



Note: Percents shown are of total occupant fatalities or of total nonoccupant fatalities, respectively.

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Comparisons across several years are best made using fatality rates based on exposure data such as the amount of motor vehicle travel. Vehicle miles of travel (VMT), the number of driver licenses in force, and vehicle registration data, from the Federal Highway Administration (FHWA), were used for this purpose. In Table III-1 rates are computed per 100 million VMT, per 1,000 licenses, and per 1,000 registered vehicles for each year from 1978 to 1983.

Steady annual increases in total deaths coincided with continued increases in VMT each year through 1979. However, in 1979 and 1980 fatalities remained almost constant, although VMT decreased. Thus, the rate of deaths per mile driven increased. In 1981 this trend reversed: travel began to increase while the number of people killed dropped. The fatality rate declined 6.2 percent from 1980 to 1981 and the decline doubled from 1981 to 1982. From 1982 to 1983 the rate of decline slowed to 6.5 percent. During the period of decline from 1980 through 1983, deaths per 100 million VMT dropped 23.7 percent to a record low of 2.58.

The rate of fatalities per 1,000 licenses in force dropped slightly from 1978 to 1979, continued to decline gradually through 1981 then dropped dramatically in 1982. During 1983, it declined by another 5.5 percent to 0.276 fatalities per 1,000 licensed drivers. This pattern of decline was also the case for the fatality rate per 1,000 registered vehicles.

TABLE III-1
FATALITY RATES

	1978	1979	1980	1981	1982	1983
Number of Fatal Accidents	44,433	45,223	45,284	44,000	39,092	37,971
Number of Traffic Fatalities	50,331	51,093	51,091	49,301	43,945	42,584
Vehicle-Miles Traveled (100 Million)	15,447	15,291	15,106	15,550	15,924	16,491
Fatalities Per 100 Million Vehicle-Miles	3.26	3.34	3.38	3.17	2.76	2.58
Annual Percentage Change in Fatalities Per 100 Million Vehicle-Miles Traveled	0.0	+2.4	+1.2	-6.5	-12.9	-6.5
Licensed Drivers (1,000)	140,840	143,280	145,970	147,970	150,310	154,221
Fatalities Per 1,000 Licensed Drivers	0.357	0.356	0.350	0.332	0.292	0.276
Annual Percentage Change in Fatalities Per 1,000 Licensed Drivers	+2.9	-0.3	-1.7	-4.9	-12.0	-5.5
Registered Vehicles (1,000)	153,637	159,621	164,852	165,732	165,253	169,446
Fatalities Per 1,000 Registered Vehicles	0.328	0.320	0.310	0.297	0.266	0.251
Annual Percentage Change in Fatalities Per 1,000 Registered Vehicles	+0.9	-2.4	-3.1	-4.1	-10.4	-5.6

TABLE III-2
VEHICLES INVOLVED BY VEHICLE TYPE
1978-1983

	1978		1979		1980		1981		1982		1983	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Passenger Cars	40,544	63.2	39,999	61.8	39,059	61.5	38,725	61.8	34,209	60.9	33,288	60.4
Motorcycles	4,512	7.0	4,730	7.3	5,009	7.9	4,774	7.6	4,311	7.7	4,141	7.5
Other Motorized Cycles	131	0.2	186	0.3	185	0.3	157	0.3	179	0.3	160	0.3
Light Trucks	10,707	16.7	11,490	17.7	11,477	18.1	10,884	17.4	10,065	17.9	9,870	17.9
Medium Trucks	1,142	1.8	1,203	1.9	1.092	1.7	888	1.4	662	1.2	664	1.2
Heavy Trucks	4,610	7.2	4,877	7.5	4.284	6.7	4,317	6.9	3,910	7.0	4,174	7.6
Buses	372	0.6	347	0.5	330	0.5	341	0.5	288	0.5	306	0.6
Special Vehicles	1,762	2.7	1,599	2.5	1,631	2.6	1,856	3.0	1,439	2.5	1,523	2.8
Unknown	364	0.6	331	0.5	418	0.7	724	1.2	1,111	2.0	973	1.8
Total	64,144	100.0	64,762	100.0	63,485	100.0	62,666	100.0	56,174	100.0	55,099	100.0

TABLE III-3
OCCUPANT FATALITIES BY VEHICLE TYPE
1978-1983

	1978		1979		1980		1981		1982		1983	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Passenger Cars	28,153	67.8	27,808	66.3	27,449	65.5	26,545	65.7	23,330	65.4	22,975	65.9
Motorcycles	4,451	10.7	4.713	11.2	4.961	11.8	4,716	11.7	4,270	12.0	4,103	11.8
Other Motorized Cycles	126	0.3	181	0.4	183	0.4	158	0.4	183	0.5	161	0.5
Light Trucks	6,048	14.6	6,455	15.4	6,506	15.7	6,129	15.2	5,580	15.7	5,379	15.4
Medium Trucks	351	0.8	344	0.8	285	0.7	235	0.6	154	0.4	166	0.5
Heavy Trucks	1,042	2.5	1,087	2.6	976	2.3	896	2.2	789	2.2	806	2.3
Buses	41	0.1	39	0.1	46	0.1	56	0.1	35	0.1	53	0.2
Special Vehicles	1,069	2.6	1,057	2.5	1,178	2.8	1,213	3.0	1,001	2.8	1,060	3.0
Unknown	252	0.6	246	0.6	283	0.7	445	1.1	304	0.9	137	0.4
Total	41,533	100.0	41,930	100.0	41.927	100.0	40,393	100.0	35,646	100.0	34,840	100.0

TABLE III-4
DISTRIBUTION OF FATALITIES BY PERSON ROLE
1978-1983

	1978		1979		1980		1981		1982		1983	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Drivers	28,283	56.2	28,863	56.5	28,816	56.4	28,200	57.2	24,690	56.2	24,135	56.7
Passengers	13,108	26.0	12,964	25.4	12,972	25.4	12,055	24.5	10,897	24.7	10,595	24.9
Unknown Occupants	142	0.3	103	0.2	139	0.3	169	0.3	89	0.2	110	0.3
Pedestrians	7,795	15.5	8.096	15.8	8,070	15.8	7,837	15.9	7,331	16.7	6,824	16.0
Pedalcyclists	892	1.8	932	1.8	965	1.9	936	1.9	883	2.0	839	2.0
Other or Unknown	111	0.2	135	0.3	129	0.3	104	0.2	85	0.2	81	0.2
Total	50,331	100.0	51,093	100.0	51,091	100.0	49,301	100.0	43,945	100.0	42,584	100.0

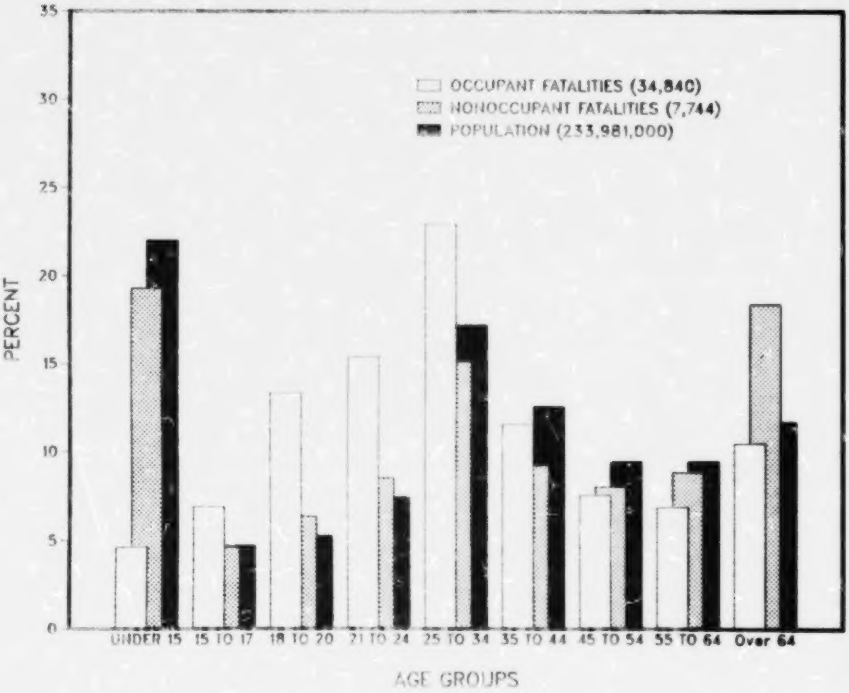
Source for population: U.S. Bureau of Census

During the year, 90,663 people were occupants of vehicles involved in fatal accidents. Of these occupants, 60 percent were drivers; 44.2 percent of these drivers were killed. Of all the involved passengers, 29.6 percent were killed.

More than half of the fatally-injured passengers and 34 percent of the fatally injured drivers were younger than 25, and 61 percent of all drivers killed were younger than 35 (Table III-5). The percentage of young people, 15-24 years old, among all people killed in motor vehicle accidents in 1983 was more than double that age group's representation in the national population. People over 64 were also significantly overrepresented in nonoccupant fatalities (Figure III-6).

Differences in the frequency of fatal accidents in different time segments are the result of a variety of factors, and the influence of these factors shift as the time interval under consideration changes. For example, it is probable that VMT has an influence on the seasonal distribution of fatalities. This influence seems to be overshadowed by factors associated with various parts of the day. More drivers are likely to become drowsy or to be under the influence of alcohol at night, when traffic density is low, than during daylight hours. It is important to consider these other factors when viewing the remaining figures and tables of this chapter.

FIGURE III-6
PERCENT DISTRIBUTION OF U.S. POPULATION AND FATALITIES



Source for population: U.S. Bureau of Census

NOTE: 82 Fatalities where Age was Unknown

TABLE III-5
DISTRIBUTION OF OCCUPANT FATALITIES BY AGE AND ROLE

	Drivers		Passengers		Unknown		Total	
	Number	%	Number	%	Number	%	Number	%
Under 15	133	0.6	1,454	13.7	3	2.7	**1,590**	**4.6**
15 to 17	1,192	4.9	1,191	11.2	12	10.9	**2,395**	**6.9**
18 to 20	3,060	12.7	1,580	14.9	34	30.9	**4,674**	**13.4**
21 to 24	3,873	16.0	1,456	13.7	28	25.5	**5,357**	**15.4**
25 to 34	6,331	26.2	1,635	15.4	18	16.4	**7,984**	**22.9**
35 to 44	3,257	13.5	794	7.5	7	6.4	**4,058**	**11.6**
45 to 54	2,061	8.5	571	5.4	2	1.8	**2,634**	**7.6**
55 to 64	1,793	7.4	620	5.9	2	1.8	**2,415**	**6.9**
Over 64	2,406	10.0	1,243	11.7	2	1.8	**3,651**	**10.5**
Unknown	29	0.1	51	0.5	2	1.8	**82**	**0.2**
Total	24,135	100.0	10,595	100.0	110	100.9	**34,840**	**100.0**

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As in previous years, the greatest number of fatalities in 1983 occurred in the summer. Forty-one percent more traffic deaths occurred during summer than during winter (Figure III-7). About the same number of fatalities occurred during the spring and fall seasons.

Fatalities by month for 1983 (Table III-6) reflect similar seasonal variations. Fatalities increased after February, then decreased after August. However, the decrease in the latter months of 1983 was not as great as in winter months of previous years. Fatalities for motorcycle riders were far more seasonal. Nonoccupant fatalities varied only slightly from month to month.

Several factors can influence or at least correlate with these monthly changes from year to year: (a) the yearly increase or decrease in total fatalities, (b) changes in the severity and duration of winter conditions, and (c) fuel availability, economic conditions, and their effects on driving habits and VMT. While the precise effect of each of these is uncertain, they should be considered when examining monthly fatalities.

FIGURE III-7
SEASONAL DISTRIBUTION OF FATALITIES
(42,584)

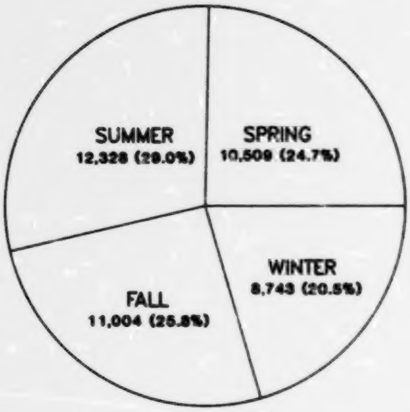

TABLE III-6
FATALITIES BY MONTH AND PERSON TYPE
(42,584)

	Motorcyclists		Non-occupants		All Others		Total	
	Number	%	Number	%	Number	%	Number	%
January	113	2.8	577	7.5	2,184	7.1	2,874	6.8
February	127	3.1	520	6.7	2,048	6.7	[illegible]	6.3
March	194	4.7	600	7.7	2,284	7.4	3,078	7.2
April	310	7.5	581	7.5	[illegible]	[illegible]	3,237	7.7
May	457	11.1	605	7.8	[illegible]	8.5	3,660	8.6
June	508	12.4	601	7.8	2,594	8.4	3,703	8.7
July	656	15.9	681	8.8	2,809	9.1	4,146	9.7
August	582	14.2	709	9.2	2,865	9.3	4,155	9.8
September	536	13.0	702	9.1	2,759	9.0	3,987	9.4
October	334	8.1	751	9.7	2,885	9.4	3,970	[illegible]
November	180	4.4	696	9.0	2,677	8.7	3,551	8.3
December	117	2.8	723	9.3	[illegible]	8.7	3,580	8.4
Total	4,103	100.0	7,745	100.0	30,737	100.0	42,584	100.0

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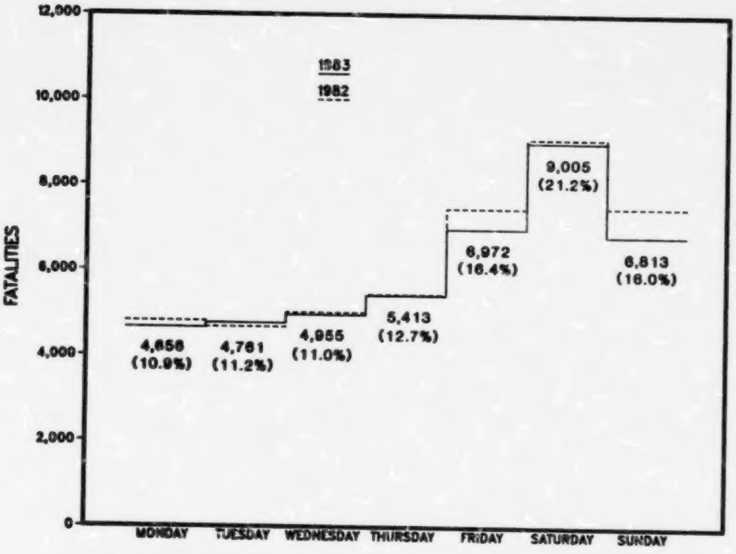
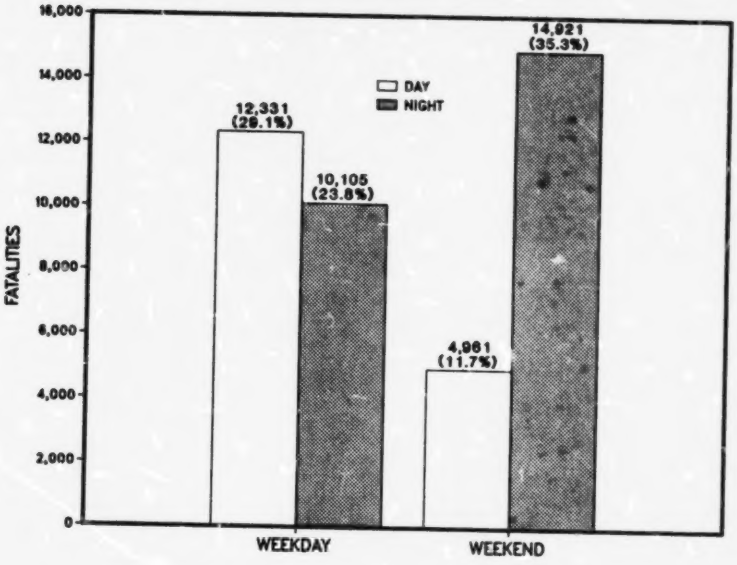
As in previous years, accidents on Fridays, Saturdays, and Sundays resulted in more than half of all deaths. Fatalities from Friday and Sunday accidents decreased substantially during 1983 (Figure III-8). Although weekends* constitute only about one-third of a week (60 out of 168 hours), almost half (47.0 percent) of all fatalities occurred on weekends. More than one-third of all fatalities (35.3 percent) occurred on weekend nights (Figure III-9).

FIGURE III-8
FATALITIES BY DAY OF WEEK
(42,584)



NOTE: 9 Fatalities where day of week was unknown

FIGURE III-9
FATALITIES BY TIME OF DAY AND WEEK *
(42,584)



NOTE: 266 Fatalities where time was Unknown

* "Weekday" - 6 a.m. Monday through 5:59 p.m. Friday.
"Weekend" - 6 p.m. Friday through 5:59 a.m. Monday.
"Day" - 6 a.m. through 5:59 p.m.
"Night" - 6 p.m. through 5:59 a.m.

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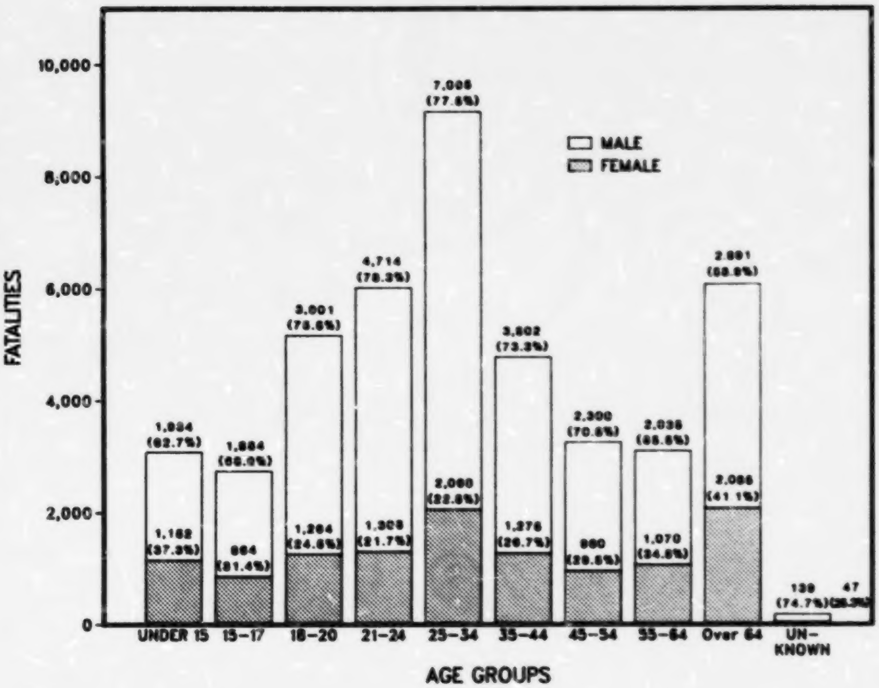
Between 1982 and 1983, male fatalities dropped 4.3 percent, while female fatalities increased by 0.2 percent.

In 1983, as in prior years, males outnumbered females as fatal accident victims in every age group. Ages 15-34, of both sexes combined, accounted for more than half of all fatalities (54.2 percent). Males were 76.2 percent of the fatalities in that age group (Table I-5 and Figure III-10). People older than 64 have a greater chance of dying if they are in a fatal accident than do younger vehicle occupants. For most age groups, their fatal crash involvement and their number of fatalities were roughly proportionate to their numbers in the population, with the exception of people who are over the age of 64. Those over 64 are only seven percent of all occupants in fatal accidents. However, 10.5 percent of all fatally injured occupants are older than 64 (Table III-5 and Table III-7).

FIGURE III-10
FATALITIES BY AGE AND SEX
(42,584)



[illegible]

	[illegible]		[illegible]		[illegible]		Total	
	Number	%	Number	%	Number	%	Number	%
Under 15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15 to 17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18 to 20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21 to 24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25 to 34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
35 to 44	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
45 to 54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
55 to 64	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Over 64	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Unknown	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100.0

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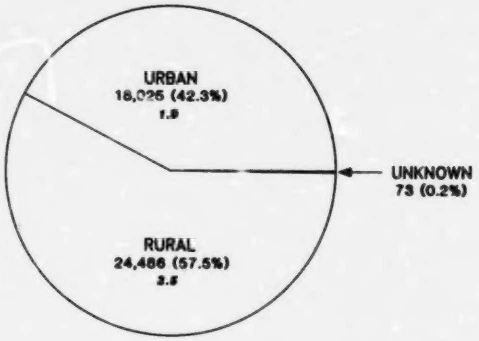
Environmental aspects of 1983 fatal accidents are presented in Figures III-11, III-12 and III-13.

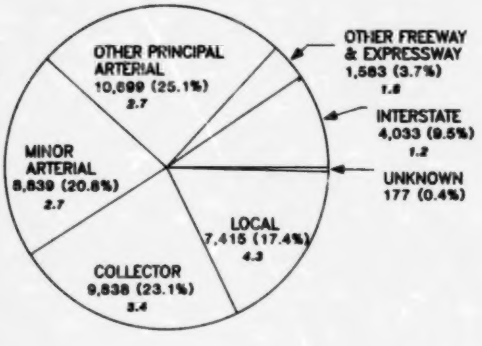
- As in previous years, rural areas had more fatalities and a higher fatality rate than urban areas (Figure III-11).
- Accidents on arterials caused more than half of all fatalities (Figure III-12). Based on vehicle miles traveled, Interstate and other limited access highways were more than twice as safe as any other type of highway.
- Most deaths resulted from accidents that occurred during normal weather conditions (Figure III-13), with only 13.2 percent of them associated with inclement weather.

FIGURE III-11
DISTRIBUTION OF FATALITIES AND FATALITY RATES BY LAND USE
(42,584)



Note: x.x = Fatalities per 100 million VMT.

FIGURE III-12
DISTRIBUTION OF FATALITIES AND FATALITY RATES BY ROADWAY FUNCTION CLASS
(42,584)



Note: x.x - Fatalities per 100 million VMT.

FIGURE III-13
DISTRIBUTION OF FATALITIES BY ATMOSPHERIC CONDITION
(42,584)

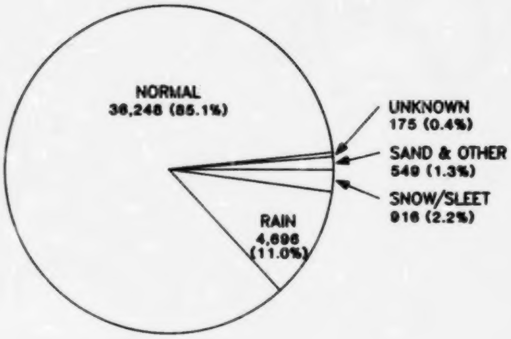


Table III-8 lists the number of deaths that occurred on major holidays. The days selected for each holiday are those on which it was assumed most holiday travelers were on the road. The New Year's holiday includes deaths from accidents that occurred on January 1, 1983 and December 31, 1983.

The days included in holiday periods accounted for 7.7 percent of all the deaths in 1983. The most fatal holiday was the 4-day Labor Day period (718 fatalities--1.7 percent of the year's total), followed by the 4-day periods around Independence Day (662 deaths), and Memorial Day (622 deaths). By way of comparison, fatalities are almost as high during a typical non-holiday 4-day period, Friday through Monday, (an average of 525 fatalities - 1.2 percent of the annual toll - occurred in 1983, a rate virtually unchanged from 1982). It is probably safe to assume, in view of the substantial travel which occurs during holiday periods, that the fatality rate per 100,000,000 VMT is, in fact, lower during those periods than for a typical non-holiday period. VMT data for holidays are not available.

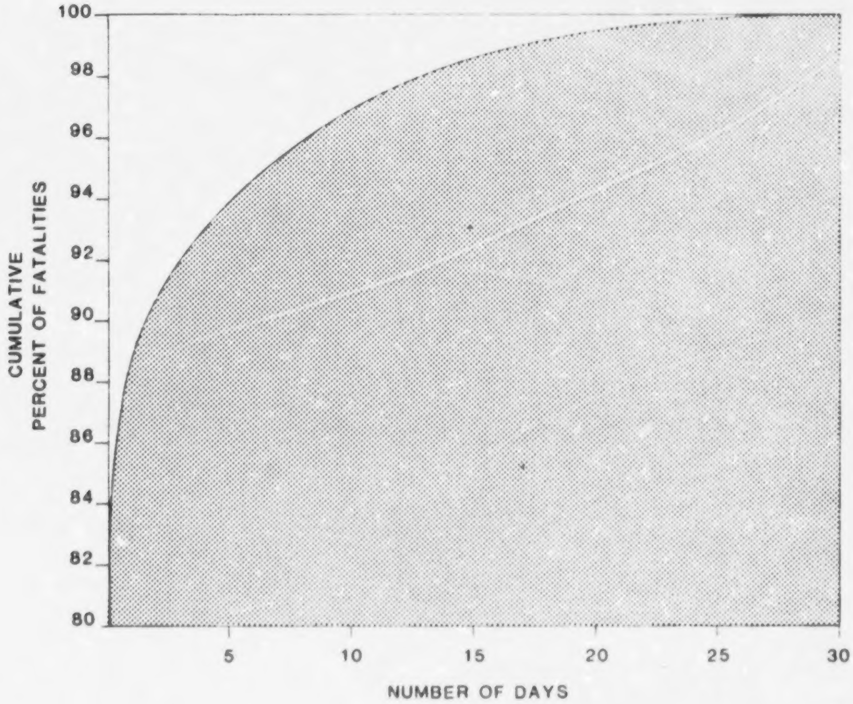
Four of every five deaths (81.2 percent) that resulted from traffic accidents occurred on the same day as did the accident. More than ninety percent (93.8) of all fatalities occur within five days of the accident (Figure III-14).

TABLE III-8
1983 HOLIDAY FATALITIES

		Number of Fatalities	Percent of Total
Non-holidays		39,301	92.3
New Year's Day*	**(Saturday)**	165	0.4
Memorial Day	**(Friday - Monday)**	622	1.5
Fourth of July	**(Friday - Monday)**	662	1.5
Labor Day	**(Friday - Monday)**	718	1.7
Thanksgiving	**(Wednesday - Sunday)**	603	1.4
Christmas	**(Friday - Monday)**	414	1.0
New Year's Eve**	**(Saturday)**	99	0.2
Total 1983 Fatalities		**42,584**	**100.0**
Average	**(Friday - Monday)**	525	1.2

* January 1, 1983
** December 31, 1983

FIGURE III-14
NUMBER OF DAYS BETWEEN ACCIDENT AND FATALITY



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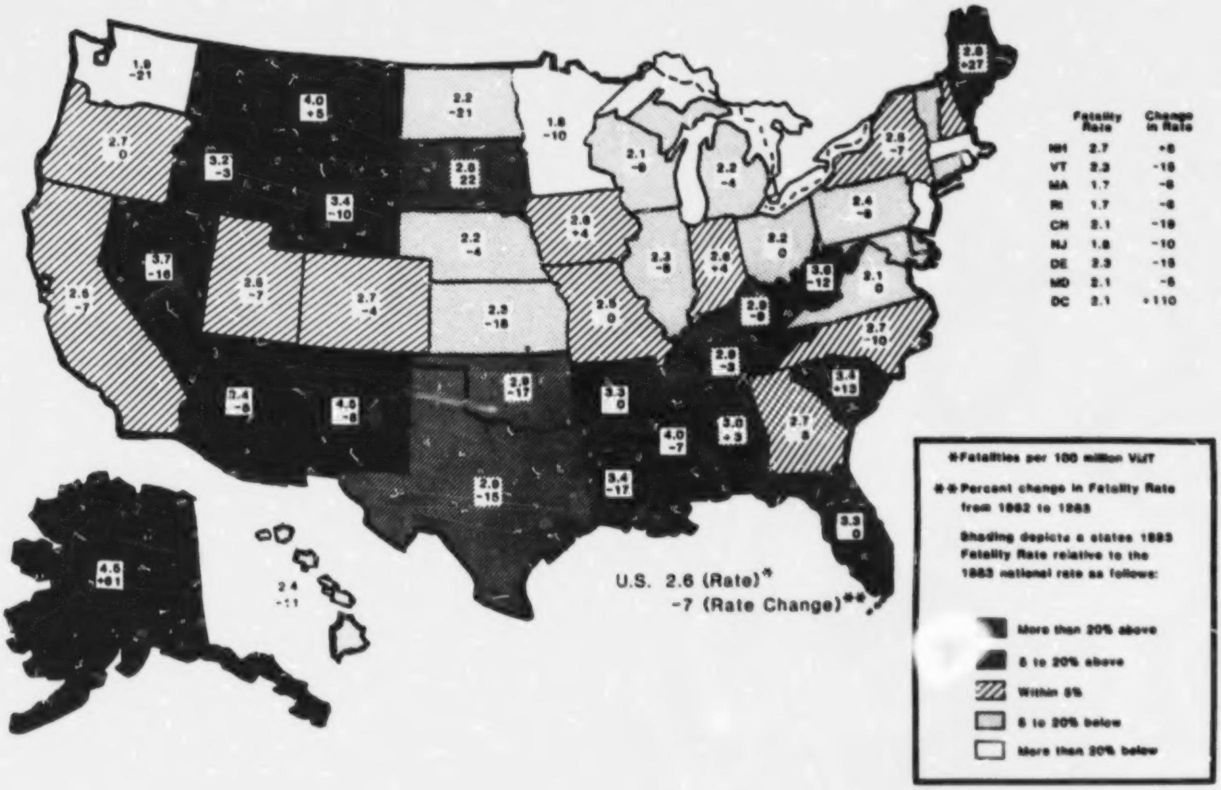
IV. State Statistics

During 1983, thirty-seven states had fewer fatalities per 100 million vehicle miles of travel* (VMT) than they did in 1982. Twenty-four had death rates in 1983 less than the 2.6 Percent national average (Figure IV-1).

FIGURE IV-1
1983 FATALITY RATE AND PERCENT CHANGE IN FATALITIES FROM 1982



	Fatality Rate	Change in Rate
NH	2.7	+6
VT	2.3	-18
MA	1.7	-8
RI	1.7	-6
CT	2.1	-18
NJ	1.8	-10
DE	2.3	-15
MD	2.1	-6
DC	2.1	+110

*Fatalities per 100 million VMT

**Percent change in Fatality Rate from 1982 to 1983

Shading depicts a states 1983 Fatality Rate relative to the 1983 national rate as follows:

- ■ More than 20% above
- ◩ 5 to 20% above
- ▨ Within 5%
- ▩ 5 to 20% below
- □ More than 20% below

*VMT by state are preliminary estimates made by FHWA.

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Table IV-1 lists state fatalities for 1978 through 1983 and compares 1983 fatalities to 1982 fatalities. Nationally the number of fatalities dropped by 3.1 percent in 1983. However, the reductions were not uniform from one state to another. A few states had decreases of about 20 percent (North Dakota, Washington and Oklahoma) while others had substantial increases. Fatalities in southwestern states continued to drop while southeastern states showed marked increases. With the exception of Maine and New Hampshire, which had sizable increases, fatalities dropped in the northeast.

TABLE IV-1
FATALITIES FOR 1978-1983
PERCENT CHANGE 1982-1983

State	1978	1979	1980	1981	1982	1983	% Change in Fatalities 1982-1983
Alabama	1,142	998	940	933	839	930	10.9
Alaska	127	90	88	100	105	150	42.9
Arizona	1,027	1,029	947	917	724	675	-6.8
Arkansas	571	548	588	536	550	557	1.3
California	5,310	5,542	5,496	5,170	4,615	4,573	-0.9
Colorado	694	691	709	755	668	646	-3.3
Connecticut	452	568	575	518	515	438	-15.0
Delaware	125	118	153	111	122	110	-9.8
District of Columbia	49	44	41	49	35	66	88.6
Florida	2,235	2,593	2,825	3,044	2,653	2,683	1.1
Georgia	1,472	1,524	1,508	1,418	1,229	1,296	5.5
Hawaii	194	205	186	150	163	141	-13.5
Idaho	327	333	331	293	256	263	2.7
Illinois	2,140	2,017	1,975	1,821	1,651	1,526	-7.6
Indiana	1,266	1,299	1,166	1,147	961	1,016	5.7
Iowa	638	655	626	613	480	514	7.1
Kansas	572	519	595	580	498	411	-17.5
Kentucky	878	896	820	812	822	778	-5.4
Louisiana	1,079	1,195	1,219	1,233	1,091	933	-14.5
Maine	237	236	265	219	166	224	34.9
Maryland	711	671	756	781	640	656	2.5
Massachusetts	861	917	881	746	659	651	-1.2
Michigan	2,020	1,823	1,750	1,564	1,392	1,314	-5.6
Minnesota	962	867	848	753	571	555	-2.8
Mississippi	784	715	695	744	730	715	-2.1
Missouri	1,190	1,147	1,175	1,034	890	911	2.4
Montana	270	332	325	338	254	286	12.6
Nebraska	340	330	396	378	261	255	-2.3
Nevada	305	354	346	294	280	253	-9.6
New Hampshire	171	184	194	148	173	191	10.4
New Jersey	1,124	1,142	1,120	1,162	1,061	932	-12.2
New Mexico	669	633	606	544	577	531	-8.0
New York	2,436	2,396	2,610	2,487	2,162	2,075	-4.0
North Carolina	1,492	1,527	1,503	1,475	1,303	1,234	-5.3
North Dakota	181	128	151	166	148	116	-21.6
Ohio	2,047	2,081	2,033	1,776	1,607	1,582	-1.6
Oklahoma	901	853	959	989	1,054	848	-19.5
Oregon	708	676	646	645	518	550	6.2
Pennsylvania	2,081	2,153	2,089	2,029	1,819	1,721	-5.4
Rhode Island	108	123	129	102	105	100	-4.8
South Carolina	883	900	852	845	730	844	15.6
South Dakota	191	211	228	177	148	175	18.2
Tennessee	1,241	1,210	1,153	1,104	1,055	1,037	-1.7
Texas	3,914	4,168	4,366	4,623	4,213	3,823	-9.3
Utah	370	321	334	364	295	283	-4.1
Vermont	119	159	137	114	107	94	-12.2
Virginia	1,063	1,016	1,045	1,011	881	901	2.3
Washington	985	1,015	971	862	748	698	-6.7
West Virginia	457	512	523	410	450	425	-5.6
Wisconsin	971	985	972	918	770	725	-5.8
Wyoming	241	244	245	264	201	173	-13.9
Total	**50,331**	**51,093**	**51,091**	**49,301**	**43,945**	**42,584**	**-3.1**

In most states, the two most frequently reported first harmful events in fatal accidents were collisions with motor vehicles in transport and collisions with fixed objects (Table IV-2). One notable exception was the high incidence of overturn (rollover) in fatal accidents in the more sparsely populated and mountainous states of Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Utah, and Wyoming. In other areas (Arizona, Florida, New Mexico, New York, Rhode Island, Utah and, most notably, the District of Columbia) collision with a pedestrian or pedalcyclist ranked as either the most frequent or second most frequent first harmful event in fatal accidents. More than one-third (37.9 percent) of all fatal accidents in the District of Columbia were collisions with nonoccupants.

TABLE IV-2
PERCENT OF FATAL ACCIDENTS BY FIRST HARMFUL EVENT

State	Total Accidents	Collision with				Noncollision		Unknown
		Motor Vehicle in Transport	Nonoccupant	Fixed Objects	Other Object not Fixed	Overturn	Other	
Alabama	806	40.4	14.3	31.5	2.1	9.9	1.7	
Alaska	135	39.3	16.3	17.0	2.2	23.7		1.5
Arizona	616	38.5	20.8	16.9	2.1	19.8	1.6	0.3
Arkansas	485	38.4	12.6	29.3	4.3	13.6	1.9	
California	4,089	35.2	21.6	27.9	3.7	10.1	1.4	0.0
Colorado	591	30.3	16.4	27.2	2.7	20.6	2.7	
Connecticut	404	31.4	16.3	42.8	3.5	4.2	1.7	
Delaware	98	37.8	19.4	33.7	2.0	7.1		
District of Columbia	58	37.9	37.9	19.0			5.2	
Florida	2,412	41.3	27.8	19.0	2.4	6.8	2.6	
Georgia	1,157	40.4	18.1	29.3	3.2	7.3	1.7	
Hawaii	133	33.1	19.5	34.6	3.8	5.3	3.8	
Idaho	231	33.3	11.7	22.1	4.8	26.8	1.3	
Illinois	1,379	39.4	19.7	27.0	4.6	6.7	2.5	
Indiana	876	44.5	12.7	30.0	5.8	5.3	1.7	
Iowa	437	48.1	7.6	26.3	3.2	11.9	3.0	
Kansas	361	40.2	8.3	29.4	6.9	13.3	1.9	
Kentucky	690.	33.9	13.2	40.9	1.9	8.1	2.0	
Louisiana	836	41.7	20.9	29.5	3.3	3.5	1.0	
Maine	198	27.8	13.1	39.9	1.5	14.1	3.5	
Maryland	607	40.9	22.7	29.8	2.1	2.6	1.8	
Massachusetts	605	29.4	25.6	40.7	1.2	1.7	1.5	
Michigan	1,192	37.3	22.8	27.1	2.9	8.4	1.5	
Minnesota	498	45.8	14.7	21.3	3.4	13.7	1.2	
Mississippi	626	33.5	15.5	33.2	2.4	14.1	1.3	
Missouri	810	40.4	14.3	30.4	3.3	10.2	1.4	
Montana	253	25.3	11.9	28.9	3.2	29.2	1.6	
Nebraska	221	52.0	10.9	18.1	5.0	13.1	0.9	
Nevada	220	25.5	20.9	25.0	1.8	25.9	0.9	
New Hampshire	166	29.5	18.7	39.8	3.0	4.8	4.2	
New Jersey	866	32.3	28.4	33.0	3.0	2.7	0.6	
New Mexico	467	29.6	23.8	18.4	3.9	22.5	1.1	0.9
New York	1,916	29.5	30.4	31.2	2.9	4.3	1.6	
North Carolina	1,083	38.0	19.9	32.2	2.1	6.6	1.2	
North Dakota	105	37.1	10.5	21.9	1.9	25.7	2.9	
Ohio	1,416	36.2	16.1	36.8	4.3	4.8	1.8	
Oklahoma	720	44.2	12.5	35.4	2.4	4.0	1.5	
Oregon	485	38.6	15.7	24.7	2.9	16.3	1.9	
Pennsylvania	1,544	37.9	17.6	38.1	1.7	3.1	1.2	0.4
Rhode Island	96	27.1	28.1	38.5	2.1	4.2		
South Carolina	739	33.8	22.2	30.7	2.0	9.1	2.2	
South Dakota	147	39.5	12.9	22.4	2.7	19.7	2.7	
Tennessee	919	38.7	11.1	35.6	2.8	10.2	1.5	
Texas	3,328	39.2	17.8	25.7	4.7	11.0	1.6	
Utah	253	32.8	22.9	13.4	5.9	22.5	2.4	
Vermont	87	34.5	11.5	39.1	2.3	9.2	3.4	
Virginia	803	34.4	18.3	35.7	2.4	7.8	1.4	
Washington	628	33.1	16.1	31.4	2.9	15.1	1.4	
West Virginia	379	36.7	11.3	34.3	2.1	14.0	1.6	
Wisconsin	648	39.8	16.4	30.2	2.5	8.3	2.8	
Wyoming	152	26.3	11.8	12.5	7.2	40.8	1.3	
Total	37,921	37.1	19.2	29.4	3.2	9.3	1.7	0.0

Table IV-3 lists the 1983 fatal accident totals and monthly percentages by state. Large variations in monthly percentages can be expected in states with small numbers of fatal accidents. As in previous years, states in geographical areas with severe weather conditions, had fewer fatal accidents during winter months.

TABLE IV-3
PERCENT OF FATAL ACCIDENTS BY MONTH

State	Total Accidents	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Alabama	806	6.1	5.8	7.3	8.4	10.2	7.8	8.3	7.7	9.6	11.3	8.7	8.8
Alaska	135	5.9	3.7	3.0	4.4	7.4	8.1	17.8	22.2	10.4	6.7	7.4	3.0
Arizona	616	6.7	8.1	8.6	9.7	7.0	4.9	10.2	8.4	9.6	8.1	9.9	8.8
Arkansas	485	6.2	6.2	7.6	7.0	11.3	8.9	8.9	8.2	10.3	7.4	10.3	7.6
California	4,089	6.7	6.6	7.5	8.1	8.8	8.2	9.1	9.9	9.8	8.7	8.0	8.7
Colorado	591	5.8	6.4	5.6	7.3	9.5	7.6	11.5	11.2	12.0	9.0	7.3	6.9
Connecticut	404	5.0	4.0	5.7	8.4	11.1	9.2	13.6	7.2	11.6	8.4	7.4	8.4
Delaware	98	4.1	5.1	7.1	7.1	10.2	13.3	9.2	10.2	11.2	5.1	6.1	11.2
District of Columbia	58	6.9	3.4	12.1	10.3	10.3	3.4	17.2	3.4	6.9	12.1	5.2	8.6
Florida	2,412	7.6	8.5	8.7	8.0	8.0	6.7	8.5	8.7	7.5	9.3	8.6	10.0
Georgia	1,157	6.8	6.9	7.3	7.1	9.3	7.3	9.4	9.9	8.8	9.6	7.9	9.5
Hawaii	133	9.0	6.8	9.8	7.5	11.3	9.0	8.3	7.5	6.0	8.3	9.8	6.8
Idaho	231	5.2	6.1	4.3	4.8	10.4	12.1	10.8	12.6	12.6	8.7	6.5	6.1
Illinois	1,379	7.0	7.3	7.2	6.9	7.3	8.7	10.4	9.6	8.8	10.6	8.8	7.5
Indiana	876	6.8	6.4	10.0	6.3	9.0	9.1	10.3	10.6	8.6	8.9	7.1	6.8
Iowa	437	7.1	5.7	6.4	5.3	9.2	9.2	15.0	11.4	8.7	10.8	5.0	8.2
Kansas	361	5.5	4.2	6.6	6.9	12.2	8.0	11.9	10.5	12.7	8.6	7.2	5.5
Kentucky	690	6.1	5.5	6.2	8.0	8.6	10.4	11.2	8.7	8.6	9.1	9.0	8.7
Louisiana	836	7.9	8.0	6.1	8.9	8.6	7.2	9.1	6.8	8.5	10.4	9.8	8.7
Maine	198	7.6	4.5	6.1	6.6	8.1	8.6	7.1	10.6	12.6	11.1	9.6	7.6
Mississippi	626	6.2	5.8	8.8	9.1	8.1	7.2	9.6	9.4	8.0	10.9	9.3	7.7
Missouri	810	6.7	6.3	6.8	8.3	8.3	8.1	9.3	10.9	10.5	9.3	7.5	8.1
Montana	253	7.5	5.9	5.9	5.1	8.3	9.9	11.1	17.4	12.3	5.1	7.9	3.6
Nebraska	221	7.2	6.3	5.9	6.3	7.2	9.5	14.0	13.6	9.5	10.9	5.4	4.1
Maryland	607	6.3	5.1	6.9	6.8	8.4	7.1	10.7	10.7	9.7	8.7	9.2	10.4
Massachusetts	605	5.8	6.0	7.9	8.3	9.6	10.7	9.3	9.1	9.3	7.8	6.6	9.8
Michigan	1,192	8.1	6.7	6.3	7.0	7.0	9.1	9.4	8.8	10.2	11.4	8.9	7.0
Minnesota	498	4.4	5.2	4.6	7.8	8.2	13.5	9.8	10.4	11.4	10.0	7.0	7.4
Nevada	220	6.8	5.9	7.7	9.1	10.5	11.8	9.1	10.5	9.1	11.8	3.2	4.5
New Hampshire	166	8.4	4.2	4.8	6.0	7.8	7.2	9.0	12.7	9.6	11.4	9.0	9.6
New Jersey	866	6.7	5.8	6.7	7.0	9.5	8.9	8.7	9.7	9.9	9.4	8.4	9.4
New Mexico	467	5.6	4.5	7.1	8.6	9.2	9.2	9.0	10.1	9.2	9.4	9.6	8.6
New York	1,916	7.6	5.2	7.1	7.9	7.5	9.0	9.7	9.5	10.1	8.7	9.1	8.6
North Carolina	1,083	6.4	6.5	8.8	7.3	9.0	8.5	9.3	9.6	9.2	8.8	7.1	9.5
North Dakota	105	4.8	3.8	1.0	10.5	10.5	11.4	9.5	12.4	8.6	13.3	9.5	4.8
Ohio	1,416	6.1	6.2	6.0	5.4	8.5	10.0	10.3	10.1	10.0	8.8	8.4	10.0
Oklahoma	720	8.7	6.3	7.5	8.7	9.7	7.1	10.6	8.1	10.1	9.2	5.6	8.5
Oregon	485	4.5	6.8	7.8	7.0	9.1	8.5	10.1	10.7	8.2	9.9	9.3	8.0
Pennsylvania	1,544	7.0	5.2	6.7	7.3	8.9	9.7	8.6	10.3	8.9	9.0	8.8	9.6
Rhode Island	96	8.3	5.2	3.1	6.3	7.3	6.3	15.6	8.3	11.5	9.4	7.3	11.5
South Carolina	739	7.2	6.1	6.1	6.9	9.9	10.3	8.3	10.1	10.0	9.2	7.6	8.4
South Dakota	147	4.8	5.4	7.5	5.4	11.6	10.2	12.2	10.2	12.9	6.1	10.2	3.4
Tennessee	919	5.7	7.5	7.8	7.1	7.6	8.9	9.9	9.6	9.4	9.1	7.7	9.7
Texas	3,328	7.1	6.8	7.5	7.7	8.3	8.6	9.8	8.8	8.6	9.4	9.2	7.5
Utah	253	8.7	6.3	7.9	5.9	7.1	10.7	11.1	11.1	10.3	8.3	8.3	4.3
Vermont	87	6.9	3.4	9.2	5.7	5.7	12.6	8.0	11.5	6.9	12.6	6.9	10.3
Virginia	803	6.4	6.0	6.1	8.2	8.2	8.5	7.7	9.6	10.8	11.5	8.3	8.7
Washington	628	6.8	4.8	6.4	10.0	7.2	9.4	11.0	9.1	9.1	9.4	8.9	8.0
West Virginia	379	6.6	7.1	7.1	7.1	5.5	10.6	12.1	11.1	9.8	8.2	6.9	7.9
Wisconsin	648	6.8	3.1	6.3	5.9	8.0	10.3	11.9	12.3	11.4	9.1	9.0	5.9
Wyoming	152	5.9	4.6	5.9	6.6	3.3	7.9	15.8	17.8	8.6	12.5	5.9	5.3
Total	37,971	6.8	6.3	7.2	7.6	8.5	8.7	9.8	9.7	9.5	9.3	8.3	8.3

Some of the variations in percentages of fatalities by functional class of roadway (Table IV-4) are probably the result of different proportions of road mileage among the states. Nationally, more than two of every five fatal accidents occurred on arterial routes other than the Interstate System and Other Freeways and Expressways. These roadways, plus collector roads and local streets, accounted for more than four of every five fatalities (86.4 percent). Despite the nationwide decline in fatalities from 1982 to 1983, minor increases in the percent of fatalities occurred on Interstate, collector and local highways.

TABLE IV-4
PERCENT OF FATALITIES BY ROADWAY FUNCTION CLASS

State	Total Fatalities	Interstate	Other Freeway & Expressway	Other Principal Arterial	Minor Arterial	Collector	Local	Unknown
Alabama	930	6.3		24.3		27.7	41.6	
Alaska	150	4.0	4.7	9.3	22.0	25.3	18.7	6.0
Arizona	675	14.8	0.1	18.7	29.9	17.5	19.0	
Arkansas	557	11.7	1.6	25.5	15.6	22.8	22.8	
California	4,573	9.4	6.0	31.6	26.0	17.6	9.5	
Colorado	646	14.9	2.5	28.8	19.7	26.2	8.0	
Connecticut	438	18.7	4.1	26.0	17.8	20.1	12.6	0.7
Delaware	110	6.4		50.0	10.9	18.2	14.5	
District of Columbia	66	9.1	15.2	24.2	33.3	6.1	12.1	
Florida	2,683	7.3	19.3	28.5	1.0	11.5	31.5	0.8
Georgia	1,296	8.5		18.1	25.2	17.8	30.4	
Hawaii	141	6.4	9.2	17.7	36.2	19.1	11.3	
Idaho	263	9.9		32.7	14.1	24.0	19.4	
Illinois	1,526	7.8	0.5	13.2	41.3	20.7	16.5	
Indiana	1,016	9.5	1.6	22.2	26.1	23.6	16.9	
Iowa	514	8.0		27.8	25.5	26.7	12.1	
Kansas	411	6.3	2.7	31.4	19.5	18.5	21.7	
Kentucky	778	8.9	0.3	15.7	19.4	43.4	12.3	
Louisiana	933	7.8	0.1	15.4	31.0	31.5	12.2	1.9
Maine	224	6.7	1.8	22.3	14.7	32.6	17.4	4.5
Maryland	656	9.3	2.7	27.3	24.2	22.1	11.7	2.6
Massachusetts	651	8.9	9.1	19.5		49.6	12.9	
Michigan	1,314	5.9	1.5	25.9	24.5	26.0	16.1	0.2
Minnesota	555	4.3	0.4	24.1	27.6	31.2	12.4	
Mississippi	715	6.9	0.1	18.0	25.3	18.9	30.2	0.6
Missouri	911	13.7	0.3	35.1	1.0	34.0	15.8	
Montana	286	16.1		30.4	21.3	19.6	12.6	
Nebraska	255	7.8		33.7	22.4	14.9	21.2	
Nevada	253	22.5	5.5	20.9	20.6	18.6	11.9	
New Hampshire	191	5.8	3.7	10.5	15.7	20.9	16.2	27.2
New Jersey	932	4.8	4.8	30.3	29.9	17.7	12.4	
New Mexico	531	15.8	0.2	22.4	25.4	17.1	19.0	
New York	2,075	6.3	6.6	25.7	27.8	19.3	14.3	0.0
North Carolina	1,234	6.2	1.3	21.6	12.6	35.7	22.4	
North Dakota	116	5.2		20.7	26.7	37.1	10.3	
Ohio	1,582	9.1	2.0	17.7	22.3	27.9	21.0	
Oklahoma	848	11.9	1.7	15.7	26.8	33.8	8.3	1.9
Oregon	550	8.5	0.2	46.0	7.8	24.4	13.1	
Pennsylvania	1,721	6.6	2.6	27.4	26.1	18.2	17.9	1.3
Rhode Island	100	14.0	14.0	16.0	27.0	19.0	10.0	
South Carolina	844	7.5		43.0	0.5	30.7	18.4	
South Dakota	175	11.4		32.6	17.1	18.3	20.6	
Tennessee	1,037	10.9	0.6	23.5	24.3	22.2	18.5	
Texas	3,823	15.3	5.5	25.5	17.5	22.2	14.0	
Utah	283	20.5	1.4	9.2	20.1	8.1	40.3	0.4
Vermont	94	4.3	2.1	27.7	18.1	33.0	14.9	
Virginia	901	9.4	3.3	21.3	25.9	23.2	16.9	
Washington	698	10.0		26.2	22.3	25.6	15.8	
West Virginia	425	6.1		19.8	28.2	34.8	11.1	
Wisconsin	725	3.6		28.6	27.6	21.7	18.6	
Wyoming	173	25.4		21.4	19.1	27.2	6.9	
Total	**42,584**	**9.5**	**3.7**	**25.1**	**20.8**	**23.1**	**17.4**	**0.4**

TABLE IV-5
ACCIDENT RATES PER LICENSED DRIVER, PER SQUARE MILE, AND PER VMT

State	Total Fatalities	Licensed Drivers	Fatalities per 100,000 Drivers	Land Area (Square Mi.)	Fatalities per 1,000 Square Mi.	1983 VMT (Millions)	Fatalities Per 100 Million VMT (1983)
Alabama	930	2,393,878	38.8	51,609	18.0	31,032	3.0
Alaska	150	288,739	52.0	586,412	0.3	3,358	4.5
Arizona	675	2,178,815	31.0	113,909	5.9	19,611	3.4
Arkansas	557	1,649,567	33.8	53,104	10.5	16,684	3.3
California	4,573	16,648,518	27.5	158,693	28.8	182,652	2.5
Colorado	646	2,229,042	29.0	104,247	6.2	24,109	2.7
Connecticut	438	2,249,525	19.5	5,009	87.4	20,630	2.1
Delaware	110	432,029	25.5	2,057	53.5	4,886	2.3
District of Columbia	66	370,196	17.8	67	985.1	3,099	2.1
Florida	2,683	8,347,269	32.1	58,560	45.8	81,776	3.3
Georgia	1,296	3,725,127	34.8	58,876	22.0	48,837	2.7
Hawaii	141	575,013	24.5	6,450	21.9	5,873	2.4
Idaho	263	648,108	40.6	83,557	3.1	8,287	3.2
Illinois	1,526	6,984,733	21.8	56,400	27.1	67,370	2.3
Indiana	1,016	3,550,785	28.6	36,291	28.0	39,837	2.6
Iowa	514	1,928,799	26.6	56,290	9.1	19,661	2.6
Kansas	411	1,681,197	24.4	82,264	5.0	18,153	2.3
Kentucky	778	2,192,567	35.5	40,395	19.3	26,719	2.9
Louisiana	933	2,767,356	33.7	48,523	19.2	27,573	3.4
Maine	224	770,240	29.1	33,215	6.7	7,924	2.8
Maryland	656	2,799,441	23.4	10,577	62.0	30,618	2.1
Massachusetts	651	3,678,678	17.7	8,257	78.8	37,541	1.7
Michigan	1,314	6,344,657	20.7	58,216	22.6	60,855	2.2
Minnesota	555	2,373,908	23.4	84,068	6.6	31,063	1.8
Mississippi	715	1,802,952	39.7	47,716	15.0	17,802	4.0
Missouri	911	3,322,500	27.4	69,686	13.1	36,543	2.5
Montana	286	488,603	58.5	147,138	3.3	7,181	4.0
Nebraska	255	1,094,680	23.3	77,227	3.3	11,534	2.2
Nevada	253	676,074	37.4	110,540	2.3	6,872	3.7
New Hampshire	191	697,012	27.4	9,304	20.5	7,181	2.7
New Jersey	932	5,458,667	17.1	7,836	118.9	52,217	1.8
New Mexico	531	765,505	69.4	121,666	4.4	11,678	4.5
New York	2,075	9,605,780	21.6	49,756	41.7	83,783	2.5
North Carolina	1,234	3,966,351	31.1	52,586	23.5	45,038	2.7
North Dakota	116	431,740	26.9	70,665	1.6	5,363	2.2
Ohio	1,582	7,397,289	21.4	41,222	38.4	73,214	2.2
Oklahoma	848	2,174,350	39.0	69,919	12.1	29,565	2.9
Oregon	550	1,900,674	28.9	96,981	5.7	20,557	2.7
Pennsylvania	1,721	7,442,842	23.1	45,333	38.0	72,302	2.4
Rhode Island	100	603,176	16.6	1,214	82.4	6,014	1.7
South Carolina	844	2,007,683	42.0	31,055	27.2	24,977	3.4
South Dakota	175	482,439	36.3	77,047	2.3	6,317	2.8
Tennessee	1,037	2,933,197	35.4	42,244	24.5	36,261	2.9
Texas	3,823	11,406,433	33.5	267,339	14.3	131,883	2.9
Utah	283	926,434	30.5	84,916	3.3	11,221	2.5
Vermont	94	360,642	26.1	9,609	9.8	4,151	2.3
Virginia	901	3,704,171	24.3	40,817	22.1	42,299	2.1
Washington	698	2,867,032	24.3	68,192	10.2	36,144	1.9
West Virginia	425	1,417,000	30.0	24,181	17.6	11,696	3.6
Wisconsin	725	3,085,549	23.5	56,154	12.9	34,106	2.1
Wyoming	173	394,041	43.9	97,914	1.8	5,059	3.4
Total	42,584	154,221,003	27.6	3,615,303	11.8	1,649,106	2.6

TABLE IV-6
PERCENT OF OCCUPANT FATALITIES BY VEHICLE TYPE
1983

State	Total Occupant Fatalities	Passenger Cars	Motor-cycles	Other Motorized Cycles	Light Trucks	Medium Trucks	Heavy Trucks	Buses	Special Vehicles	Unknown
Alabama	807	70.6	7.2		16.2	0.6	2.6		2.6	0.1
Alaska	126	44.4	10.3	0.8	27.8		1.6		15.1	
Arizona	541	51.9	18.7	0.4	21.3	0.6	2.6	0.2	3.5	0.9
Arkansas	497	56.9	8.9	0.6	24.1	0.4	3.2	1.8	3.8	0.2
California	3,612	62.0	17.9	0.5	14.6	0.5	1.5	0.1	2.5	0.3
Colorado	548	54.7	12.6		21.5	0.5	3.5		7.1	
Connecticut	368	64.9	22.6	0.3	6.8	1.1	1.4		2.4	0.5
Delaware	90	72.2	11.1		15.6				1.1	
District of Columbia	43	76.7	7.0	9.3	4.7				2.3	
Florida	1,979	71.8	11.7	0.3	11.9	0.1	1.7	0.1	0.7	1.8
Georgia	1,078	70.9	7.7	0.6	14.8	1.5	1.7	0.1	2.6	0.1
Hawaii	112	67.0	16.1	2.7	7.1				7.1	
Idaho	233	51.1	10.3		30.0	0.9	5.6		2.1	
Illinois	1,237	70.6	14.4	0.2	9.5	0.5	1.7	0.1	2.8	0.2
Indiana	900	67.9	11.2	0.3	13.4	0.6	3.3	0.1	2.9	0.2
Iowa	476	61.3	11.3	1.3	15.3	0.2	3.4		7.1	
Kansas	378	62.7	11.1		17.7	1.6	2.4		4.2	0.3
Kentucky	681	67.7	6.8	0.4	17.5	0.3	2.8	0.3	4.3	
Louisiana	754	59.8	11.4	0.7	22.4	0.8	2.1	0.1	2.7	
Maine	197	68.5	13.7	1.5	13.2		0.5		2.5	
Maryland	511	71.6	12.3	0.6	10.4	0.2	2.7		1.8	0.4
Massachusetts	489	73.2	14.1	1.2	7.8		0.6		1.4	1.6
Michigan	1,033	71.3	9.8	1.2	12.5	0.1	1.2	0.1	3.4	0.5
Minnesota	480	67.5	13.7	1.7	11.5	0.2	2.1		3.3	
Mississippi	613	64.3	6.7	0.3	20.9	0.7	2.1		1.5	3.6
Missouri	782	66.5	7.9	0.1	18.0	0.4	3.8		3.2	
Montana	255	50.2	9.4		29.0	0.8	3.9		6.3	0.4
Nebraska	228	64.9	11.4		17.5	0.4	3.1		2.6	
Nevada	205	62.4	8.3	1.0	22.4		1.0		2.9	2.0
New Hampshire	160	73.1	11.2	0.6	8.7		1.2		4.4	0.6
New Jersey	670	79.6	10.7	0.6	6.4	0.1	1.2		1.2	0.1
New Mexico	410	49.8	13.2	0.5	24.9	0.2	5.4		4.9	1.2
New York	1,457	73.3	13.9	0.3	6.9	0.3	2.1	0.8	2.3	0.1
North Carolina	1,013	75.6	5.7	0.8	12.5		2.5	0.2	2.5	0.2
North Dakota	105	55.2	13.3	1.0	21.0		1.9		7.6	
Ohio	1,333	70.2	13.5	0.5	11.1	0.5	1.5	0.1	2.5	0.1
Oklahoma	755	61.1	8.5		23.7	0.5	3.6		2.6	
Oregon	468	58.3	11.8	0.2	22.4	0.4	3.0		3.8	
Pennsylvania	1,430	72.9	10.1	0.3	9.0	0.6	3.2		3.6	0.2
Rhode Island	72	65.3	27.8		4.2				2.8	
South Carolina	675	70.1	11.7	1.0	12.0	2.1	1.2		1.9	
South Dakota	154	54.5	7.8		26.0		3.2		6.5	1.9
Tennessee	923	70.0	8.6	0.7	13.3	0.2	2.8	0.1	4.0	0.3
Texas	3,165	59.0	11.0	0.0	23.6	0.4	2.8	0.5	2.5	0.1
Utah	219	53.4	12.8		22.8		5.0		5.9	
Vermont	82	75.6	6.1		7.3	1.2	1.2		3.7	4.9
Virginia	750	67.3	8.7	0.4	17.2		2.7		3.2	0.5
Washington	596	64.9	12.8	0.2	15.4		1.5		4.7	0.5
West Virginia	380	63.9	7.6		19.7	0.3	3.7		4.7	
Wisconsin	616	66.7	15.6	1.1	9.7	1.9	0.8		4.1	
Wyoming	154	41.6	9.7	0.6	29.9	1.3	6.5		10.4	
Total	**34,840**	**65.9**	**11.8**	**0.5**	**15.4**	**0.5**	**2.3**	**0.2**	**3.0**	**0.4**

PUERTO RICO

Fatal accidents in Puerto Rico are treated separately in this report to conform to the practice of other national data systems. The figures and tables in this chapter show that the pattern of fatal accidents in Puerto Rico differs from the national pattern in some respects.

- 486 fatal accidents occurred in Puerto Rico in 1983, an increase of 8 percent from 1982 (Figure IV-2).
- 514 people were killed in 1983 (up 7 percent from 1982). The percentage of nonoccupant fatalities remained at its 1982 level, slightly less than half of the total.
- Seventy-nine percent of all fatal victims were males. They greatly outnumbered females in all age groups except for those under 15 where they were evenly divided (Figure IV-3).

FIGURE IV-2
FATALITIES AND FATAL ACCIDENTS FOR 1978-1983
(Puerto Rico)

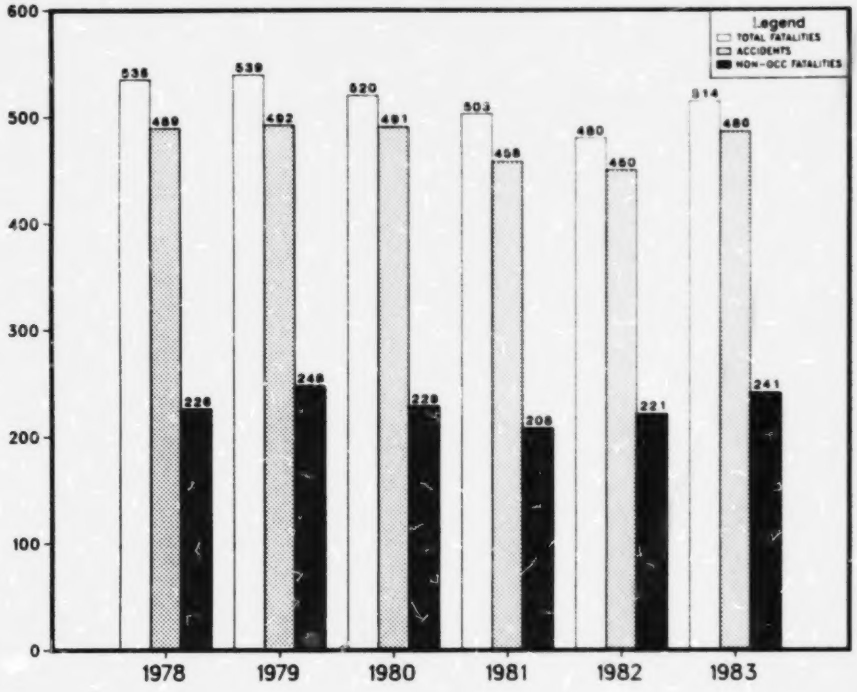
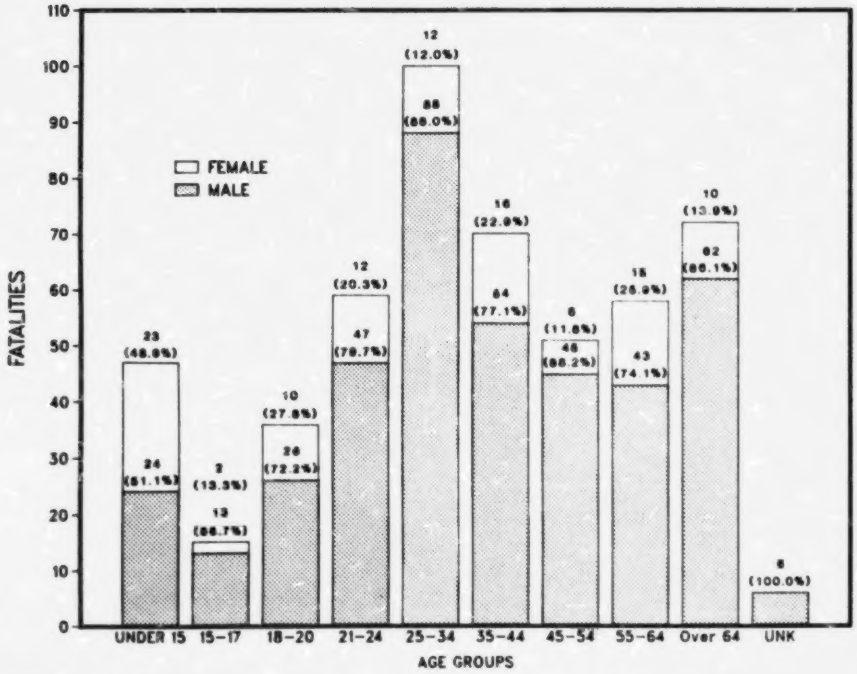


FIGURE IV-3
FATALITIES BY AGE AND SEX
(Puerto Rico)
(514)



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- Sixty-eight percent of the vehicles involved in fatal accidents were passenger cars, a slightly lower proportion than the previous year (73.3 percent). The next largest group was light trucks (Table IV-7).

- Twenty-six percent of the involved vehicle occupants were killed compared to 32 percent in 1982.

- About 75 percent of the fatally injured drivers are tested for alcohol in Puerto Rico, a rate that has significantly increased over the previous three years (Table IV-8). Any BAC testing rate above 80-85 percent is considered to be a fairly complete, unbiased sample. Of the fatally injured drivers who were tested for alcohol, 41 percent were legally intoxicated (Table IV-9).

- Most drivers held valid driver's licenses (Table IV-10).

TABLE IV-7
INVOLVED VEHICLES, OCCUPANTS AND OCCUPANT FATALITIES BY BODY TYPE
(Puerto Rico)

	Vehicles		Occupants		Occupant Fatalities	
	Number	Percent	Number	Percent	Number	Percent
Passenger Cars	433	68.3	717	68.6	195	71.4
Motorcycles	28	4.4	34	3.3	27	9.9
Other Motorized Cycles	1	0.2	1	0.1	1	0.4
Light Trucks	59	9.3	106	10.1	23	8.4
Medium Trucks	4	0.6	4	0.4	1	0.4
Heavy Trucks	9	1.4	20	1.9	1	0.4
Buses	4	0.6	56	5.4	1	0.4
Special Vehicles	28	4.4	49	4.7	22	8.1
Unknown	68	10.7	69	6.6	2	0.7
Total	634	100.0	1045	100.0	273	100.0

TABLE IV-8
FATALLY INJURED DRIVERS TESTED FOR ALCOHOL INVOLVEMENT
(Puerto Rico)

	Fatally Injured Drivers	Tested for Alcohol	
		Number	Percent
1980	183	115	62.8
1981	181	101	55.8
1982	162	94	58.0
1983	166	127	76.5

TABLE IV-9
PERCENT OF TESTED FATALLY INJURED DRIVERS BY BLOOD ALCOHOL CONTENT
(Puerto Rico)

	Blood Alcohol Content		
	None	0.01-0.09%	0.10% or more
1980	48	7	45
1981	44	8	48
1982	38	11	52
1983	40	19	41

TABLE IV-10
DRIVERS BY AGE, DRINKING INVOLVEMENT, LICENSE STATUS
(Puerto Rico)
(633)

	15 to 17		18 to 20		21 to 24		25 to 34		35 to 44		45 to 54		55 to 64		Over 64		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Not Drinking	8	1.7	39	8.5	54	11.8	137	29.9	79	17.2	45	9.8	[illegible]	[illegible]	11	2.8	62	13.5
Invalid License	3	5.9	7	13.7	10	19.6	18	35.3	10	19.6	2	3.9					1	2.0
Valid License	5	1.4	32	9.2	44	12.7	118	34.0	69	19.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.6
Unknown							1	1.7									59	98.3
Drinking Involved	3	1.7	13	7.4	32	18.3	61	34.9	30	17.1	22	12.6	[illegible]	[illegible]	[illegible]	[illegible]	1	0.6
Invalid License	1	2.5	3	7.5	10	25.0	10	25.0	12	30.0	4	10.0						
Valid License	2	1.5	10	7.4	22	16.3	51	37.8	18	13.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	0.7
Total	11	1.7	52	8.2	86	13.6	198	31.3	109	17.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	63	10.0

- Nonoccupant fatalities were up 9 percent from 221 in 1982 to 241 in 1983. As in the rest of the country, most of these occurred on the roadway and away from intersections (Table IV-11).

TABLE IV-11
NONOCCUPANT FATALITIES BY LOCATION
(Puerto Rico)
(241)

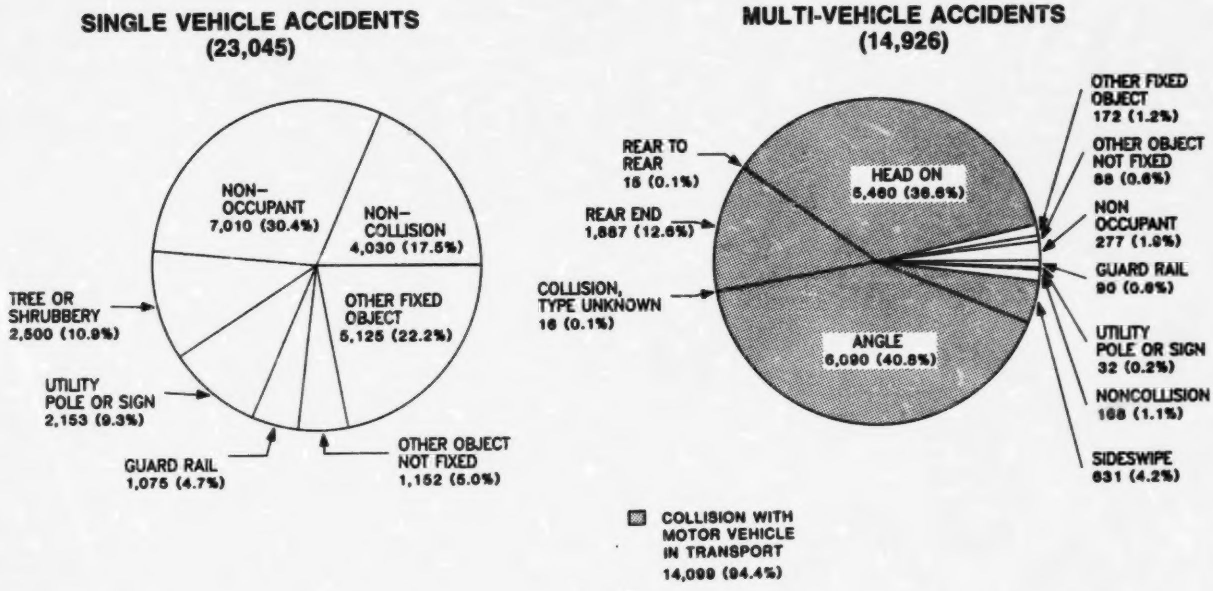
	Pedestrian		Pedalcyclist		Other Nonoccupant		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Intersection	26	100.0	2	100.0			28	100.0
In Crosswalk	6	23.1					6	21.4
On Roadway	20	76.9	2	100.0			22	78.6
Non-Intersection	100	100.0	8	100.0	1	100.0	109	100.0
In Crosswalk	5	5.0					5	4.6
On Roadway	54	54.0	6	75.0			60	55.0
Other & Unknown	41	41.0	2	25.0	1	100.0	44	40.4
Unknown	95	100.0	8	100.0	1	100.0	104	100.0
On Roadway	80	84.2	8	100.0	1	100.0	89	85.6
Other & Unknown	3	3.2					3	2.9
Unknown	12	12.6					12	11.5
Total	221	100.0	18	100.0	2	100.0	241	100.0

V.
Accidents

About 60 percent of all fatal accidents involved only one vehicle. Overall, the first harmful event in almost half (47.1 percent) of these single vehicle accidents was collision with a fixed object. The second most frequent was collision with a nonoccupant (Figure V-1). Nonoccupants include pedestrians, pedalcyclists and others not in or on a motor vehicle in transport. The majority of these were pedestrians.

In almost all multiple-vehicle accidents, the first harmful event reported was collision of two or more motor vehicles in transport (94.4 percent) (Figure V-1). Angle impacts constituted the most frequent manner in which these accidents occurred, followed by head-on collisions.

FIGURE V-1
DISTRIBUTION OF FATAL ACCIDENTS BY FIRST HARMFUL EVENT
(37,971)



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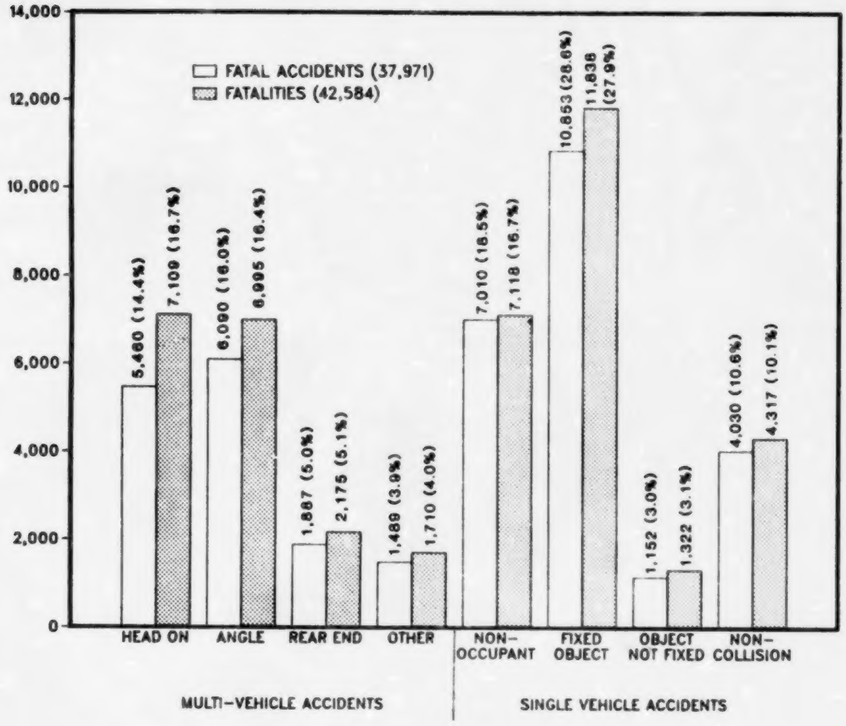
COLLISIONS

Figure V-2 shows the distribution of fatal accidents and fatalities among types of collisions.

- The majority of fatal accidents were single vehicle accidents. More fatalities occurred in this type of accident than in multi-vehicle accidents.
- Angle and head-on collisions combined accounted for 33.1 percent of all deaths.

FIGURE V-2
FATAL ACCIDENTS AND NUMBER OF FATALITIES BY FIRST HARMFUL EVENT



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Of the 14,926 fatal multiple vehicle accidents, 88.7 percent (13,236) were two-vehicle collisions. Collisions of two passenger cars comprised the single largest group of two vehicle accidents, accounting for one-third (33.8 percent) of the total. The next largest group was collisions of passenger cars with light trucks (20.4 percent). In fact, passenger cars were involved in 83.4 percent of the two-vehicle collisions (Table V-1).

TABLE V-1
FATAL ACCIDENTS AND OCCUPANT FATALITIES BY VEHICLE MIX IN TWO-VEHICLE ACCIDENTS
1983

			Occupant Fatalities*			
			Vehicle 1		Vehicle 2**	
Body Type of Vehicle 1	Body Type of Vehicle 2	Accidents	Number	Percent	Number	Percent
Passenger Car	Passenger Car	4,473	5,397	100.0	n/a	- -
Passenger Car	Motorcycle	1,198	40	3.2	1,225	96.8
Passenger Car	Other Motorized Cycle	57	1	1.7	59	98.3
Passenger Car	Light Truck	2,693	2,454	77.4	717	22.6
Passenger Car	Medium Truck	255	315	97.5	8	2.5
Passenger Car	Heavy Truck	1,772	2,117	97.5	54	2.5
Passenger Car	Bus	89	101	98.1	2	1.9
Passenger Car	Special Vehicle	359	292	69.2	130	30.8
Passenger Car	Unknown	148	193	93.7	13	6.3
Motorcycle	Motorcycle	61	69	100.0	n/a	- -
Motorcycle	Other Motorized Cycle	4	1	20.0	4	80.0
Motorcycle	Light Truck	458	480	99.6	2	0.4
Motorcycle	Medium Truck	38	42	100.0	0	0.0
Motorcycle	Heavy Truck	122	127	100.0	0	0.0
Motorcycle	Bus	21	22	100.0	0	0.0
Motorcycle	Special Vehicle	59	59	93.7	4	6.3
Motorcycle	Unknown	24	26	100.0	0	0.0
Other Motorized Cycle	Other Motorized Cycle	1	1	100.0	n/a	- -
Other Motorized Cycle	Light Truck	32	33	100.0	0	0.0
Other Motorized Cycle	Medium Truck	4	4	100.0	0	0.0
Other Motorized Cycle	Heavy Truck	3	3	100.0	0	0.0
Other Motorized Cycle	Bus	0	0	100.0	0	0.0
Other Motorized Cycle	Special Vehicle	2	2	100.0	0	0.0
Other Motorized Cycle	Unknown	1	1	100.0	0	0.0
Light Truck	Light Truck	366	421	100.0	n/a	- -
Light Truck	Medium Truck	62	63	91.3	6	8.7
Light Truck	Heavy Truck	545	614	94.8	34	5.2
Light Truck	Bus	13	16	100.0	0	0.0
Light Truck	Special Vehicle	87	40	39.2	62	60.8
Light Truck	Unknown	37	23	60.5	15	29.5
Medium Truck	Medium Truck	4	5	100.0	n/a	- -
Medium Truck	Heavy Truck	23	14	63.6	8	26.4
Medium Truck	Bus	0	0	- -	0	- -
Medium Truck	Special Vehicle	6	0	0.0	6	100.0
Medium Truck	Unknown	3	1	33.3	2	66.7
Heavy Truck	Heavy Truck	106	120	100.0	n/a	- -
Heavy Truck	Bus	8	4	16.0	21	84.0
Heavy Truck	Special Vehicle	65	5	6.8	69	93.2
Heavy Truck	Unknown	8	2	16.7	10	83.3
Bus	Bus	1	3	100.0	n/a	- -
Bus	Special Vehicle	4	0	0.0	3	100.0
Special Vehicle	Special Vehicle	12	13	100.0	n/a	- -
Special Vehicle	Unknown	2	2	100.0	0	0.0
Unknown	Unknown	10	4	100.0	n/a	- -

Note: There were two accidents involving two vehicles which had no occupant fatalities.

*Percent of all fatalities occurring in this type of accident which occur to occupants of this vehicle body type.

**If Vehicle No.2 is same body type as Vehicle No.1 - all fatalities are included under Vehicle No.1.

As a rule of thumb in two-vehicle collisions, fatalities were most frequent for occupants of the smaller of the two vehicles. Two-vehicle fatal accidents that involved motorcycles resulted in the rider's death 98.8 percent of the time. That figure rises to virtually 100 percent if motorcycle accidents with "other motorized cycles" are ignored. Fatal collisions of a truck with another vehicle more often resulted in the death of an occupant of the other vehicle than of a truck occupant.

In the 2,546 two-vehicle fatal accidents involving heavy trucks with other types of vehicles, 96 percent of the 3,082 fatalities occurred in the other vehicles. Total fatalities in this type of accident increased six percent from 1982.

HIGHWAY AND ENVIRONMENT

An important element of fatal accidents is the environment in which they occur--the type of roadway, light and weather conditions, and the type of object with which the vehicle collides.

Almost two-thirds (64 percent) of all fatal accidents occurred on straight, level highways. One in four (26.4 percent) fatal accidents occurred on a curve (Figure V-3).

As in previous years, slightly more than half (57.5 percent) of the 1983 estimated vehicle miles of travel (VMT) were in urban areas. In urban areas 1.8 fatal accidents occurred for each 100 million VMT. In rural areas the rate was almost two-thirds higher--3.0 accidents per 100 million VMT (Figure V-4). The rate of fatalities per fatal accident is almost 6 percent higher in rural areas than in urban areas. Urban travel increased from 1982 by 5.2 percent while urban deaths decreased by 3.5 percent. Rural travel increased 1.4 percent while fatalities in rural areas decreased 2.1 percent.

FIGURE V-3
FATAL ACCIDENTS BY ROADWAY ALIGNMENT AND PROFILE
(37,971)

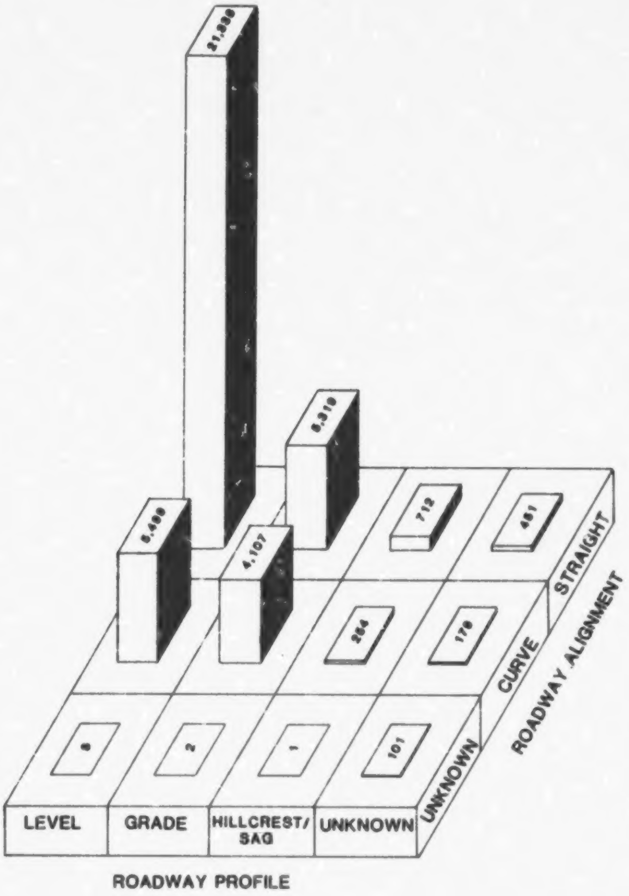
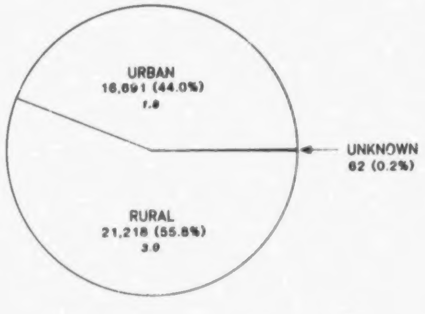


FIGURE V-4
FATAL ACCIDENTS AND ACCIDENT RATES
BY LAND USE
(37,971)

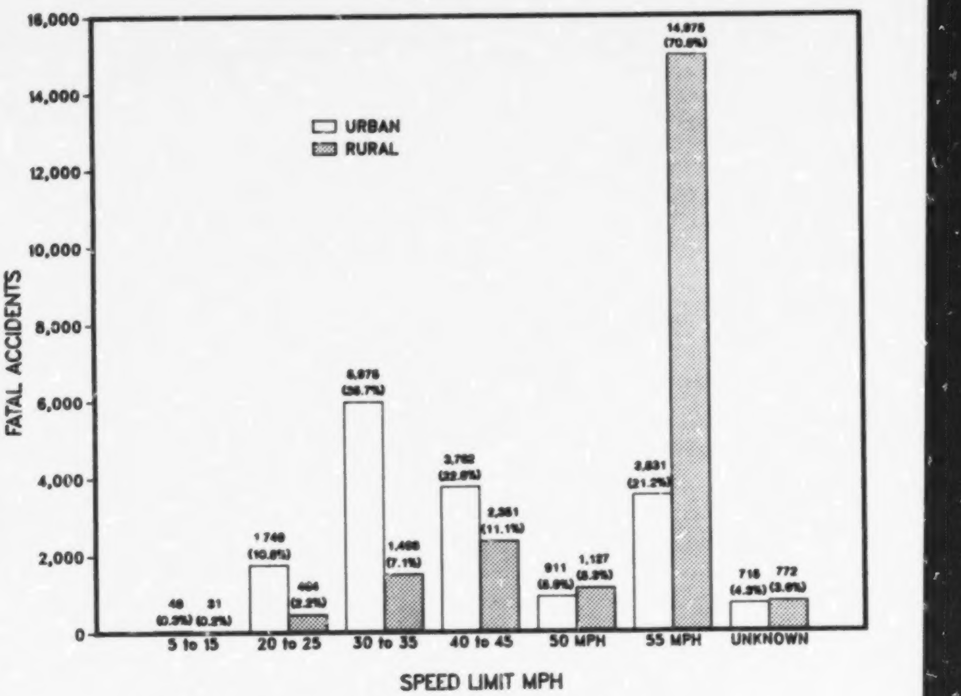


Note: x.x - Fatal Accidents per 100 million VMT.

Fatal accidents occurred more frequently on roadways with a 55 mph speed limit than on any other set of roadways (Figure V-5). The percentage of these accidents (48.7 percent) was almost three times that of the next highest, those in 30 and 35 mph zones. Not surprisingly, rural areas dominated the frequency of accidents on roadways with a 55 mph speed limit and urban areas dominated the death toll on roadways with speed limits less than 50 mph.

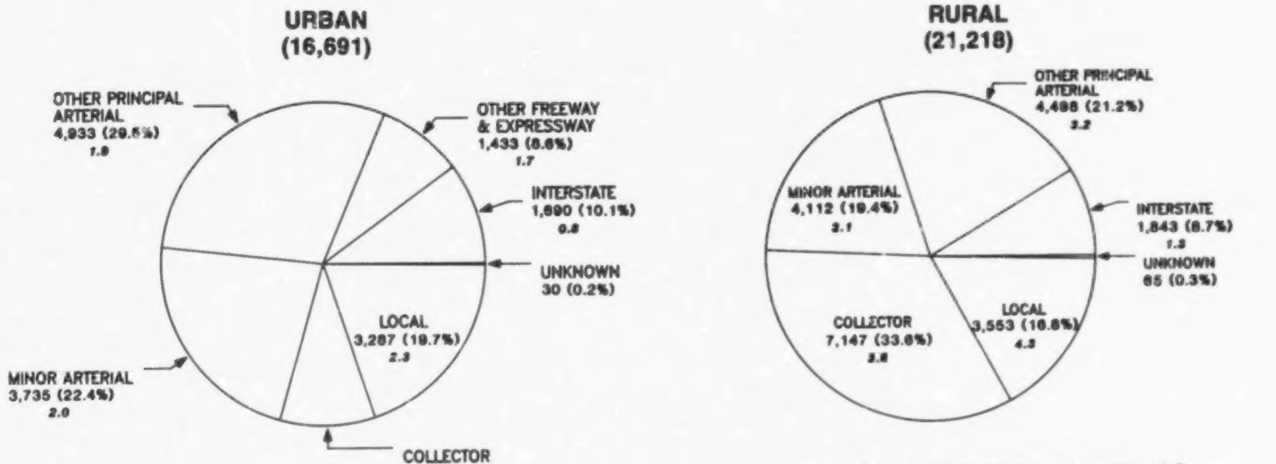
Figure V-6 shows the distributions of accidents in urban and rural areas among functional classes of roadway. The largest differences between urban and rural areas were on collector roads: Rural collector roads had a fatal accident rate twice that of urban collector roads. However, the rural collector system is much more extensive, accounting for almost 23 percent of total rural mileage. Urban collectors comprise only about 11 percent of the urban mileage. Interstate highways in both areas had the lowest fatality rates.

FIGURE V-5
FATAL ACCIDENTS BY SPEED LIMIT AND LAND USE
(37,971)



NOTE: 62 FATAL ACCIDENTS WHERE LAND USE WAS UNKNOWN.

FIGURE V-6
FATAL ACCIDENTS AND ACCIDENT RATES
BY ROADWAY FUNCTION CLASS
(37,909)



Note: *a.a* - Fatal Accidents per 100 million VMT.

Note: 62 Fatal Accidents with Unknown Land Use Not Included in Figure

Note: *a.a* - Fatal Accidents per 100 million VMT.

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Although Interstate highways had the lowest fatality rate, the numbers of vehicles involved in fatal accidents on the Interstate System did not decrease from 1982 to 1983 (Table V-2). Fatal accidents involving heavy trucks increased by 134. If heavy trucks are ignored, vehicle involvement on the Interstate System would have decreased by 2.3 percent, approximately the decrease on all highways. On the Interstate one out of every five vehicles involved in a fatal accident was a heavy truck. The frequency of heavy truck involvement in fatal accidents on the Interstate System is more than three times that on the remaining highways combined. Forty-six percent of all combination truck travel during 1983 occurred on the Interstate System.

Automobiles accounted for more than half of the involved vehicles on any of the six types of highways. On all but the Interstate, light trucks were the second most frequently involved. On local roads one out of ten vehicles involved in fatal crashes was a motorcycle.

A total of 531 fatal accidents occurred in and around construction and roadway maintenance zones, up from 437 in 1982. Table V-3 distributes these accidents by functional class of roadway. Fatal accidents in construction zones on Interstate highways were 27.9 percent higher than the previous year.

TABLE V-2
VEHICLE TYPES INVOLVED IN FATAL ACCIDENTS BY ROADWAY FUNCTION CLASS
(55,099)

	Interstate		Other Freeway & Expressway		Other Principal Arterial		Minor Arterial		Collector		Local		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Passenger Cars	2,905	55.3	1,446	65.6	9,240	61.5	7,320	61.9	7,197	60.0	5,056	58.8	121	59.0
Motorcycles	198	3.8	144	6.5	930	6.2	874	7.4	1,007	8.4	975	11.3	13	6.3
Other Motorized Cycles	1	0.0	2	0.1	28	0.2	23	0.2	34	0.3	69	0.8	3	1.5
Light Trucks	796	15.1	325	14.7	2,564	17.1	2,072	17.5	2,485	20.7	1,596	18.6	32	15.6
Medium Trucks	75	1.4	18	0.8	146	1.0	153	1.3	153	1.3	115	1.3	4	2.0
Heavy Trucks	1,018	19.4	140	6.3	1,444	9.6	815	6.9	535	4.5	205	2.4	17	8.3
Buses	23	0.4	13	0.6	95	0.6	70	0.6	48	0.4	56	0.7	1	0.5
Special Vehicles	126	2.4	35	1.6	301	2.0	318	2.7	382	3.2	355	4.1	6	2.9
Unknown	113	2.1	82	3.7	269	1.8	176	1.5	152	1.3	173	2.0	8	3.9
Total	5,258	100.0	2,205	100.0	15,017	100.0	11,821	100.0	11,993	100.0	8,600	100.0	205	100.9

TABLE V-3
FATAL ACCIDENTS IN CONSTRUCTION MAINTENANCE ZONES BY FUNCTIONAL CLASSIFICATION
(531)

	Construction Zone	Maintenance Zone	Utility Zone	Unknown Work Zone	Total
Interstate	101	20		19	140
Other Freeway & Expressway	19	5		7	31
Other Principal Arterial	97	16	1	28	142
Minor Arterial	70	9	1	15	95
Collector	42	9	4	11	66
Local	37	6	4	7	54
Unknown	2	1			3
Total	368	66	10	87	531

Most accidents occurred on the roadway away from junctions (Table V-4). Not surprisingly, fatal junction accidents were more common in urban areas than they were in rural areas. In urban areas, intersections with no control devices had the highest frequency of fatal accidents, followed by those controlled by traffic lights. In rural areas most intersection fatalities occurred where there were stop signs, followed by intersections that had no control devices (Table V-5).

TABLE V-4
FATAL ACCIDENT ENVIRONMENT
(37,971)

	On Roadway		Shoulder		Median		Roadside		Parking Lane		Other		Unknown	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Urban														
Non-Junction	6,280	55.3	738	87.1	456	84.6	1,850	82.8	63	95.5	1,348	82.6	17	81.0
Junction	4,419	38.9	85	10.0	81	15.0	347	15.5	3	4.5	260	15.9	3	14.3
Driveway, Alley Access	516	4.5	21	2.5			34	1.5			23	1.4	1	4.8
Rail Grade Crossing	129	1.1	3	0.4	1	0.2	3	0.1						
Unknown	8	0.1			1	0.2	1	0.0						
Subtotal	**11,352**	**100.0**	**847**	**100.0**	**539**	**100.0**	**2,235**	**100.0**	**66**	**100.0**	**1,631**	**100.0**	**21**	**100.0**
Rural														
Non-Junction	8,088	70.0	972	95.9	372	92.8	4,322	93.2	6	100.0	3,287	91.9	20	71.4
Junction	2,638	22.8	27	2.7	24	6.0	233	5.0			238	6.7		
Driveway, Alley Access	542	4.7	15	1.5	1	0.2	76	1.6			48	1.3		
Rail Grade Crossing	272	2.4					7	0.2			2	0.1		
Unknown	16	0.1			4	1.0							8	28.6
Subtotal	**11,556**	**100.0**	**1,014**	**100.0**	**401**	**100.0**	**4,638**	**100.0**	**6**	**100.0**	**3,575**	**100.0**	**28**	**100.0**
Unknown Land Use*	**41**	**100.0**	**3**	**100.0**			**6**	**100.0**			**12**	**100.0**		
Total	**22,949**	**100.0**	**1,864**	**100.0**	**940**	**100.0**	**6,879**	**100.0**	**72**	**100.0**	**5,218**	**100.0**	**49**	**100.0**

* 1 Railroad Grade Crossing in Unknown Land Use.

TABLE V-5
FATAL ACCIDENTS AT ROAD JUNCTIONS BY LAND USE AND INTERSECTION TRAFFIC CONTROLS
(8,373)

	Urban		Rural		Unknown		Total	
	Number	%	Number	%	Number	%	Number	%
No Controls	1,980	38.1	1,252	39.6	7	46.7	3,239	38.7
On Color Traffic Signal	1,797	34.6	200	6.3	3	20.0	2,000	23.9
Signal Flashing	107	2.1	102	3.2	1	6.7	210	2.5
Other Controls	149	2.9	90	2.8			239	2.8
Stop Sign	1,094	21.0	1,439	45.5	4	26.7	2,537	30.3
Yield Sign	41	0.8	64	2.0			105	1.2
Other			5	0.2			5	0.1
Unknown	30	0.6	8	0.3			38	0.5
Total	5,198	100.0	3,160	100.0	15	100.0	8,373	100.0

Forty-five percent of the 418 fatal accidents at rail-highway grade crossings occurred where there were neither gates, signals, nor watchmen to alert motorists to oncoming trains (Figure V-7).

Fatal accidents occurred most often during normal weather regardless of lighting condition (Figure V-8). Indeed, normal weather is associated with 86.5 percent of all fatal accidents that occurred during daylight hours.

Water, snow, ice or slush on the roadway while it was still raining, snowing or sleeting was a factor in only about 13 percent of all fatal accidents.

The substantial fatality reductions that occurred during 1983 were almost entirely in periods of normal weather. Fatalities remained at previous levels or actually increased during periods of inclement weather.

FIGURE V-7
FATAL ACCIDENTS AT RAILROAD CROSSINGS
BY TYPE OF CONTROL
(418)

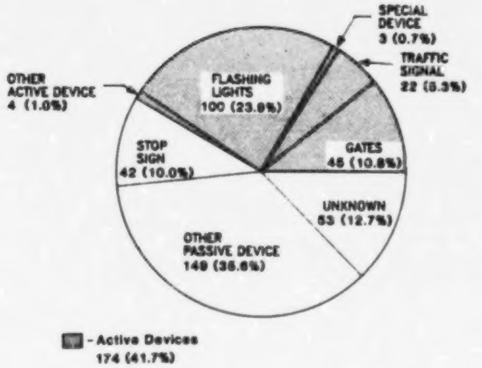
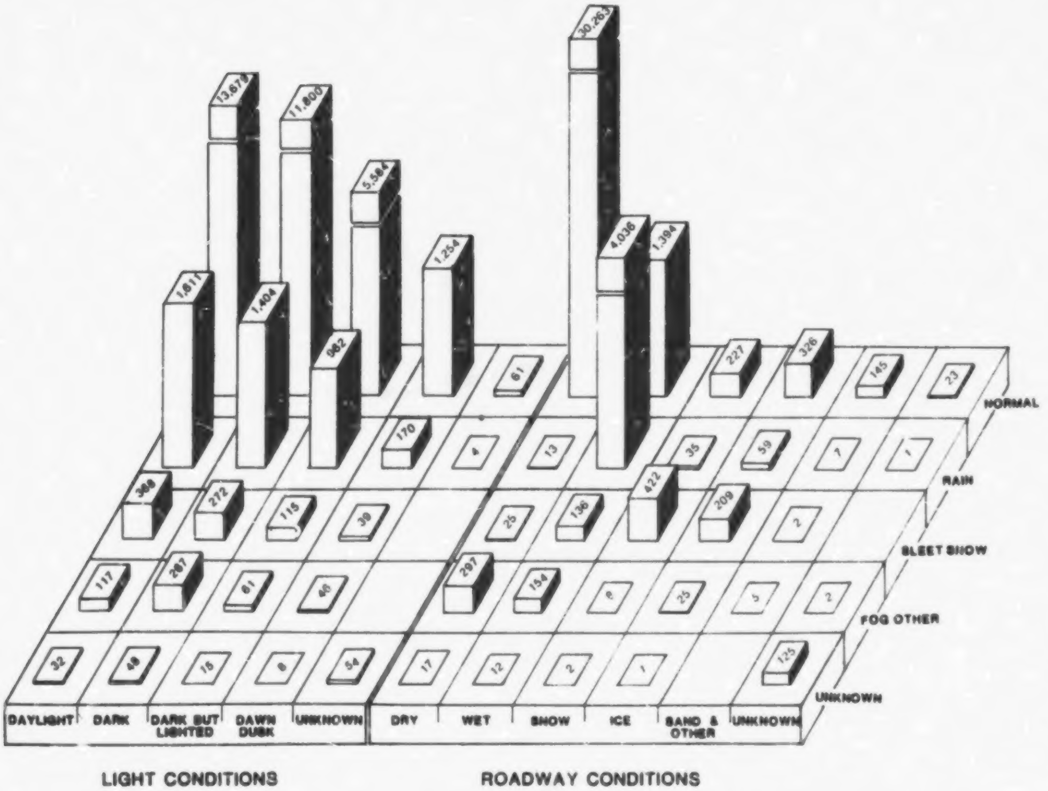


FIGURE V-8
ATMOSPHERIC CONDITIONS IN FATAL ACCIDENTS
BY LIGHT AND SURFACE CONDITIONS
(37,971)



* "Other" atmospheric conditions include smog, smoke, and blowing sand or dust.
"Normal" atmospheric conditions denote no adverse conditions.
"Other" roadway surface conditions include dirt and oil.

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VI. Vehicles

The 37,971 fatal accidents in 1983 involved 55,099 motor vehicles, 2.4 percent fewer than in 1982. Though significant, this decrease was not as sharp as the one that occurred from 1981 to 1982 when fatal accidents dropped by 11.1 percent. Figure VI-1 shows the number of vehicles per fatal accident.

Table VI-1 presents the distribution of vehicles, vehicle occupants, and associated occupant fatalities among vehicle types. Passenger cars were the most frequently involved and accounted for the largest proportion of occupant deaths. However, 3 percent fewer passenger cars were reported in fatal accidents in 1983 than in 1982, while the number of passenger car occupants killed dropped 1.5 percent. The next two most frequently involved vehicle types, associated with the next largest proportions of occupant fatalities, were light trucks and motorcycles.

Motorcyclists were 5,113 (5.6 percent) of the 90,663 occupants involved and 4,103 (11.8 percent) of the 34,840 occupants killed. Conversely, medium and heavy truck occupants together totaled 6.3 percent of all occupants, but only 2.8 percent of those killed. The number of heavy trucks involved in fatal accidents increased 5.6 percent from 1982. The smallest decreases of reported vehicle involvements in fatal accidents from 1982 to 1983 were among light and medium trucks (-2.7 percent and -1.5 percent respectively). Medium and heavy trucks occupant fatalities increased 7.8 percent and 2.2 percent respectively.

FIGURE VI-1
NUMBER OF VEHICLES PER FATAL ACCIDENT
(37,971)

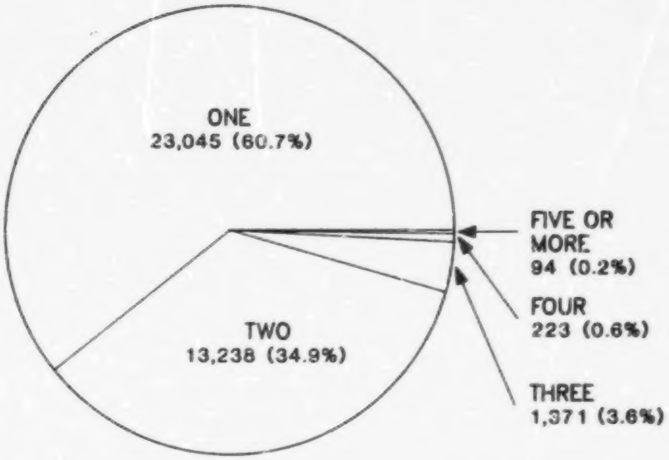

TABLE VI-1
INVOLVED VEHICLES, OCCUPANTS AND OCCUPANT FATALITIES BY BODY TYPE

	Vehicles		Occupants		Occupant Fatalities	
	Number	%	Number	%	Number	%
Passenger Cars	33,288	60.4	57,474	63.4	22,975	65.9
Convertible	265	0.5	468	0.5	222	0.6
2 Door Sedan, Hardtop, Coupe	18,342	33.3	31,139	34.3	12,955	37.2
3 Door/2 Door Hatchback	967	1.8	1,665	1.8	824	2.4
4 Door Sedan, Hardtop	8,361	15.2	14,661	16.2	5,584	16.0
5 Door/4 Door Hatchback	203	0.4	364	0.4	188	0.5
Station Wagon	2,338	4.2	4,53[illegible]	5.0	1,570	4.5
Hatchback Doors Unknown	71	0.1	12[illegible]	0.1	64	0.2
Other Auto	3	0.0	[illegible]	0.0	3	0.0
Unknown Auto	2,474	4.5	4,11[illegible]	4.5	1,407	4.0
Auto Based Pickup	240	0.4	39[illegible]	0.4	157	0.5
Auto Based Short Panel	4	0.0	[illegible]	0.0	1	0.0
Motorcycles	4,141	7.5	5,11[illegible]	5.6	4,103	11.8
Other Motorized Cycles	160	0.3	20[illegible]	0.2	161	0.5
Moped	93	0.2	10[illegible]	0.1	91	0.3
Other Motorcycle - Minibike	46	0.1	6[illegible]	0.1	50	0.1
Unknown Motorcycle	21	0.0	3[illegible]	0.0	20	0.1
Light Trucks	9,870	17.9	17,074	18.8	5,379	15.4
Van	1,451	2.6	2,973	3.3	646	1.9
Commercial (Glass) Van	69	0.1	85	0.1	20	0.1
Other Van	12	0.0	16	0.0	3	0.0
Unknown Van	80	0.1	154	0.2	28	0.1
Pickup	7,759	14.1	12,983	14.3	4,455	12.8
Pickup with Camper	69	0.1	139	0.2	41	0.1
Cab Chassis Based Light Truck	108	0.2	157	0.2	25	0.1
Panel Truck	9	0.0	12	0.0	3	0.0
Truck Based Station Wagon	148	0.3	299	0.3	85	0.2
Other Conventional Light Truck	8	0.0	13	0.0	2	0.0
Unknown Conventional Light Truck	107	0.2	161	0.2	55	0.2
Unknown Light Truck	50	0.1	82	0.1	16	0.0
Medium Trucks	664	1.2	868	1.0	166	0.5
Straight Truck 10,000 to 19,500 Lbs. GVWR	230	0.4	305	0.3	58	0.2
Straight Truck 19,500 to 26,000 Lbs. GVWR	120	0.2	151	0.2	25	0.1
Unknown Medium Truck	36	0.1	64	0.1	7	0.0
Straight Truck Unknown GVWR	268	0.5	348	0.4	76	0.2
Heavy Trucks	4,174	7.6	4,807	5.3	806	2.3
Straight Heavy Truck over 26,000 Lbs.	320	0.6	387	0.4	59	0.2
Truck Tractor	3,727	6.8	4,267	4.7	735	2.1
Unknown Heavy Truck	127	0.2	153	0.2	12	0.0
Buses	306	0.6	1,099	1.2	53	0.2
School Bus	99	0.2	337	0.4	17	0.0
Cross Country/Intercity Bus	41	0.1	176	0.2	9	0.0
Transit Bus	105	0.2	211	0.2	4	0.0
Other Bus	40	0.1	309	0.3	21	0.1
Unknown Bus	21	0.0	66	0.1	2	0.0
Special Vehicles	1,523	2.8	2,906	3.2	1,060	3.0
Auto Based Short Panel	5	0.0	15	0.0	1	0.0
Auto Based Short Utility	465	0.8	900	1.0	413	1.2
Van	13	0.0	30	0.0	7	0.0
Commercial (Glass) Van	2	0.0	3	0.0	1	0.0
Van Based Motorhome	29	0.1	75	0.1	17	0.0
Other Van	5	0.0	16	0.0	6	0.0
Unknown Van	1	0.0	4	0.0	1	0.0
Pickup Based Motorhome	18	0.0	31	0.0	6	0.0
Cab Chassis Based Light Truck	2	0.0	6	0.0	0	0.0
Utility Vehicle	567	1.0	1,122	1.2	352	1.0
Utility Vehicle Body Unknown	10	0.0	27	0.0	4	0.0
Medium or Heavy Truck Based Motorhome	15	0.0	43	0.0	6	0.0
Unknown Truck Camper/Motorhome	59	0.1	199	0.2	19	0.1
Unknown Truck	53	0.1	78	0.1	45	0.1
Snowmobile	27	0.0	41	0.0	25	0.1
Farm Equipment Other Than Trucks	146	0.3	190	0.2	92	0.3
[illegible]	45	0.1	64	0.1	42	0.1
Construction Equipment Other Than Trucks	40	0.1	40	0.0	16	0.0
Other	24	0.0	66	0.1	7	0.0
Unknown	973	1.8	1,122	1.2	137	0.4
[illegible]	198	0.4	244	0.3	40	0.1
[illegible]	14	0.0	21	0.0	4	0.0
[illegible]	761	1.4	857	0.9	93	0.3
Total	55,099	100.0	90,663	100.0	34,840	100.0

Table VI-2 distributes involved vehicles by most harmful event. Collisions with parked motor vehicles, animals, and trains are included in the "other objects not fixed" category. "Collision with motor vehicle in transport" accounted for 51.7 percent of the most harmful events in fatal accidents. Collisions with roadside objects (i.e., trees, dividers, culverts or ditches, curbs or walls, embankments, fences, light supports, guard rails, sign posts, utility poles, impact attenuators, and bridges or overpasses) were cited as the most harmful event for 14 percent of the vehicles.

The distributions of most harmful events recorded for the 17,295 occupant deaths that resulted from single-vehicle accidents and the 17,545 occupant deaths from multi-vehicle accidents are shown in Table VI-3 and Table VI-4.

TABLE VI-2
VEHICLES INVOLVED IN FATAL ACCIDENTS BY MOST HARMFUL EVENT

Most Harmful Event	Vehicles Number	
Noncollision	[illegible]	16.
Collision with		
Nonoccupant	7,439	13.
Tree or Shrubbery	[illegible]	9.
Utility Pole or Sign	1,752	3.
Guard Rail	[illegible]	1.
Other Fixed Object	[illegible]	6.
Other Object not Fixed	1,11[illegible]	2.
Motor Vehicle in Transport	[illegible]	51.
Unknown	2,3[illegible]	6.
Total	[illegible]	100.

TABLE VI-3
MOST HARMFUL EVENT IN SINGLE VEHICLE OCCUPANT FATALITIES BY LAND USE AND ROADWAY FUNCTION CLASS

Most Harmful Event	Interstate Freeway	Other Freeway & Expressway	Other Principal Arterial	Minor Arterial	Collector	Local	Unknown	Total
Urban	761	516	1,252	1,218	652	1,472	18	5,889
Noncollision Overturn	159	77	124	116	52	164	3	695
Noncollision Other	16	16	41	44	25	131	2	275
Nonoccupant		1	3	3	2	4		13
Tree or Shrubbery	27	52	132	184	153	295	2	843
Utility Pole or Sign	77	83	376	319	138	238	1	1,223
Guard Rail	216	98	58	44	38	64		[illegible]
Other Object not Fixed	74	23	79	106	99	163		[illegible]
Other Fixed Object	192	166	439	402	195	439	4	1,837
Unknown					1	3		4
Rural	1,043		1,560	1,844	4,273	2,629	41	11,390
Noncollision Overturn	400		456	450	1,021	634	7	2,969
Noncollision Other	20		31	37	132	140	3	363
Nonoccupant	1		4	1		1		7
Tree or Shrubbery	46		204	339	820	558	9	1,976
Utility Pole or Sign	54		156	198	462	409	3	1,279
Guard Rail	189		145	118	170	48		675
Other Object not Fixed	105		59	74	170	280	6	672
Other Fixed Object	228		506	625	1,478	791	13	3,638
Unknown			1	2	1	4	1	9
Unknown Land Use	2						28	30
Total	1,806	516	2,812	3,062	4,925	4,101	75	17,295

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TABLE VI-4
MOST HARMFUL EVENT IN MULTI-VEHICLE OCCUPANT FATALITIES BY LAND USE AND ROADWAY FUNCTION CLASS

Most Harmful Event	Interstate	Other Freeway & Expressway	Other Principal Arterial	Minor Arterial	Collector	Local	Unknown	Total
Urban	709	666	2,541	1,658	587	941	10	7,112
Noncollision Overturn	14	7	17	11	6	7		62
Noncollision Other	6	5	4	4		5		24
Nonoccupant	1		1			2		4
Tree or Shrubbery	1	1	2		1	2		7
Utility Pole or Sign	1	3	10	7	1	2		24
Guard Rail	27	11	8	3	3	2		54
Other Object not Fixed	9	6	5	4	4	10		38
Other Fixed Object	16	34	48	10	1	6		115
Rear End	283	162	294	161	36	63	1	1,000
Head On	165	167	725	515	209	252	2	2,035
Rear to Rear	1	1	1	1		1		5
Angle	107	243	1,337	875	297	557	7	3,423
Side-Swipe	77	26	88	66	27	31		315
Collision, Type Unknown	1		1		2	1		5
Unknown				1				1
Rural	832		3,101	2,519	3,042	874	28	10,396
Noncollision Overturn	7		23	22	22	9		83
Noncollision Other	6		11	3	4	2		26
Nonoccupant			1					1
Tree or Shrubbery			2		5	1		8
Utility Pole or Sign	1		4	4	8			17
Guard Rail	12		23	18	9			62
Other Object not Fixed	13		12	13	10	2		50
Other Fixed Object	13		25	19	16	6		79
Rear End	344		315	193	189	62	1	1,104
Head On	262		1,553	1,332	1,458	418	23	5,046
Rear to Rear			2	3	1	1	1	8
Angle	124		990	842	1,219	345	3	3,523
Side-Swipe	49		137	68	100	24		378
Collision, Type Unknown	1		3	2	1	4		11
Unknown Land Use	1		5				31	37
Total	1,542	666	5,647	4,177	3,629	1,815	69	17,545

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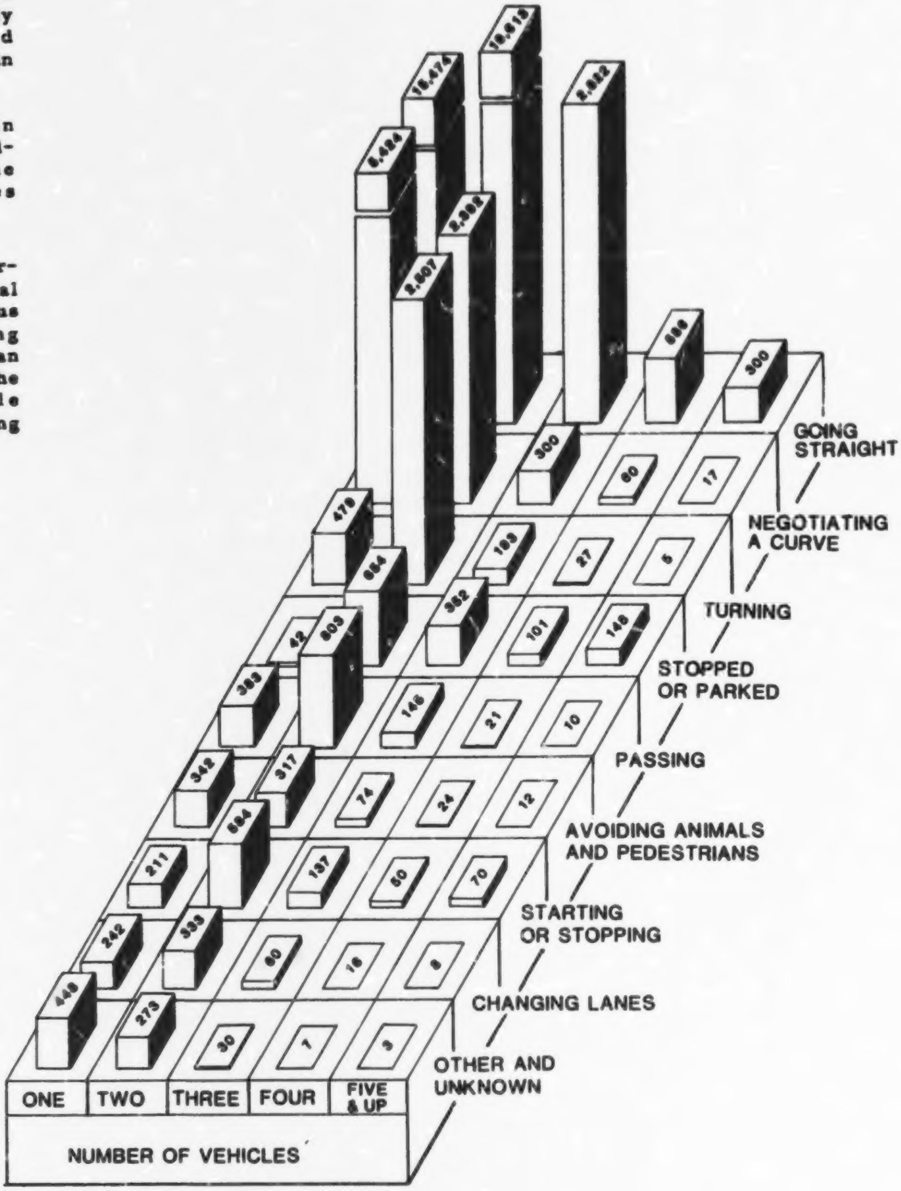
Signs, poles and other fixed objects were struck most frequently in single-vehicle accidents in urban areas. Trees and other fixed objects were the most frequently struck in rural areas. Rollovers caused a frequency of fatalities second only to collision with "other fixed objects" as the most harmful event in fatal rural accidents.

Multi-vehicle fatalities in rural areas most often involved head-on crashes. In urban areas the greatest number of fatalities occurred in angle crashes.

The greatest number (68.6 percent) of vehicles involved in fatal single and multi-vehicle crashes was reported to have been "going straight" (Figure VI-2). More than two-thirds (70.3 percent) of all the vehicles in fatal two-vehicle collisions were reportedly "going straight" prior to the crash.

FIGURE VI-2
VEHICLE MANEUVER IN FATAL ACCIDENTS
(55,099)



Of the 120 fatal accidents of vehicles carrying hazardous cargo (Figure VI-3), most were tractor-trailers (66.7 percent) or other heavy and medium trucks (23.3 percent).

It is possible for people to be killed in accidents even though the vehicle in which they were riding sustained only moderate, minor or even no damage. Figure VI-4 shows that moderate to no damage was done to 3,518 vehicles (6.4 percent of the 55,099 total involved vehicles), in which occupants were killed.

FIGURE VI-3
HAZARDOUS CARGO CARRYING VEHICLES INVOLVED IN FATAL ACCIDENTS
(120)

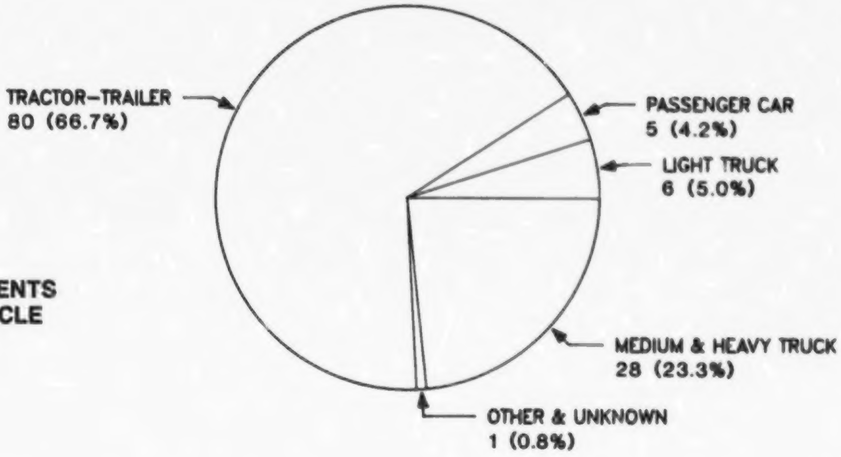
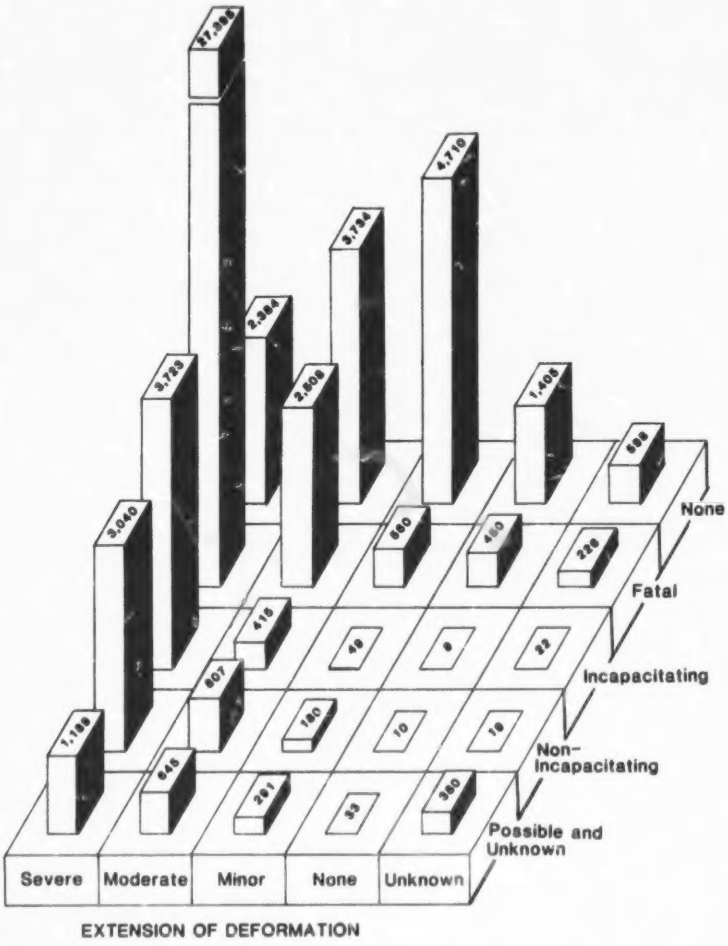


FIGURE VI-4
VEHICLE DAMAGE IN FATAL ACCIDENTS BY MOST SEVERE INJURY IN VEHICLE
(55,099)



NOTE: There were 317 vehicles which had no associated person records.
In some states the terms Disabling, Functional, and Other are used in place of Severe, Moderate, and Minor, respectively.

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The ratio of the number of occupants killed in accidents to the number of occupants involved in fatal accidents varies widely from one vehicle type to another (Table VI-5). Several factors contribute to this, including the amount of protection that the vehicle structure provides and the number of people who customarily ride in the vehicle. For example, only 4.8 percent of all school bus occupants involved in fatal accidents were killed, while 80.2 percent of all motorcycle riders who were involved in fatal accidents were killed. These ratios obviously reflect the fact that school buses generally transport more people and provide more protection than motorcycles.

The remainder of this chapter examines various aspects of fatal accidents by generic vehicle type.

PASSENGER CARS

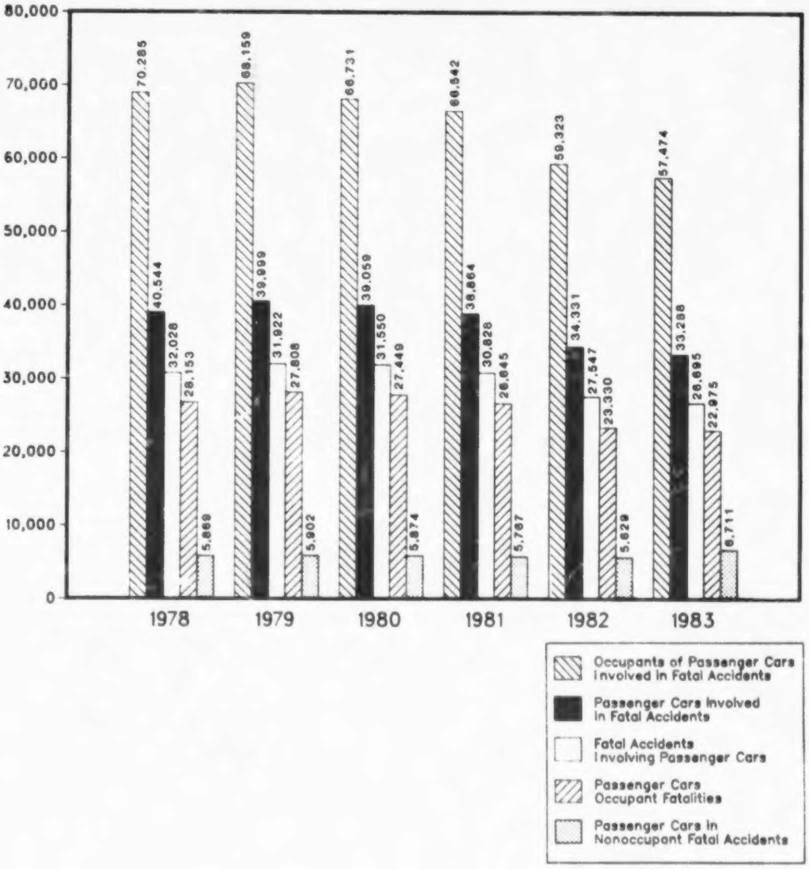
Almost two-thirds (60.4 percent) of all vehicles involved in fatal accidents were passenger cars. Table VI-1 shows the distribution of vehicle involvements and occupant deaths by type of passenger car. Two- and four-door sedans, were the most frequently involved passenger car types (48.5 percent) and accounted for most car occupant deaths (53.2 percent).

Figure VI-5 shows the six-year history of fatal accidents and fatalities involving passenger cars; 33,288 passenger cars were involved in 26,695 fatal accidents in 1983, resulting in 22,975 passenger car occupants killed, a decrease of 1.5 percent from 1982.

TABLE VI-5
OCCUPANTS AND OCCUPANT FATALITIES BY BODY TYPE

Body Type	Occupants	Fatalities	Percent of Occupants Fatally Injured
Passenger Cars	57,474	22,975	40.0
Motorcycles	5,113	4,103	80.2
Other Motorized Cycles	200	161	80.5
Light Trucks	17,074	5,379	31.5
Medium Trucks	868	166	19.1
Heavy Trucks	4,807	806	16.8
Buses	1,099	53	4.8
Special Vehicles	2,906	1,060	36.5
Unknown	1,122	137	12.2
Total	90,663	34,840	38.4

FIGURE VI-5
PASSENGER CAR INVOLVED FATAL ACCIDENTS AND RELATED FATALITIES FOR 1978-1983



The distribution of involved passenger cars by most harmful event is displayed in Figure VI-6. Collision with a motor vehicle in transport was the most harmful event for slightly less than half (49.6 percent) of the passenger cars involved in fatal accidents. Vehicles involved in collisions with other motor vehicles are further subdivided by the "manner of collision," an accident-related variable associated with the first harmful event in the accident. This classification may not be accurate for collisions of three or more vehicles. Collisions with nonoccupants and noncollisions together accounted for another 26.6 percent. However, the total number of fixed object collisions is greater than either "collision with non-occupant" or "noncollision."

The first harmful event in more than half of all passenger car occupant fatalities was a collision with another motor vehicle. In more than one-third, it was a collision with a fixed object (Table VI-6).

FIGURE VI-6
DISTRIBUTION OF PASSENGER CARS INVOLVED IN FATAL ACCIDENTS BY MOST HARMFUL EVENT
(33,288)

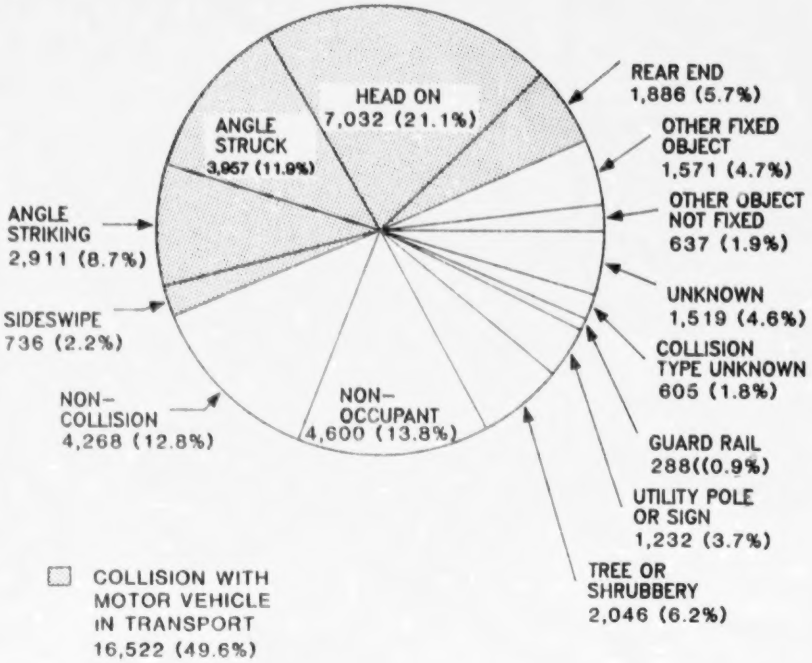


TABLE VI-6
PASSENGER CAR OCCUPANT FATALITIES BY FIRST HARMFUL EVENT
1983
(22,975)

	Number	Percent
Collision with Motor Vehicle in Transport*	11,994	52.2
Rear End	1,219	5.3
Head On	5,472	23.8
Rear to Rear	10	0.0
Angle	4,839	21.1
Side-Swipe	446	1.9
Collision, Type Unknown	8	0.0
Tree or Shrubbery	2,135	9.3
Utility Pole or Sign	1,652	7.2
Guard Rail	769	3.3
Other Object not Fixed	749	3.3
Other Fixed Object	3,575	15.6
Noncollision Overturn	1,842	8.0
Noncollision Other	247	1.1
Nonoccupant	11	0.0
Unknown	1	0.0
Total	22,975	100.0

*Based on "Manner of Collision". Possibly inaccurate where three or more vehicles are involved.

Each of the 22,975 passenger car occupant deaths in 1983 can also be classified by the point on the vehicle at which the principal impact occurred. When the terms "Front," "Rear," "Left Side," and "Right Side" are used in this report, they refer to groupings as follows:

Front:
clock points 11, 12, and 1
Rear:
clock points 5, 6 and 7
Left side:
clock points 8, 9, and 10
Right side:
clock points 2, 3 and 4

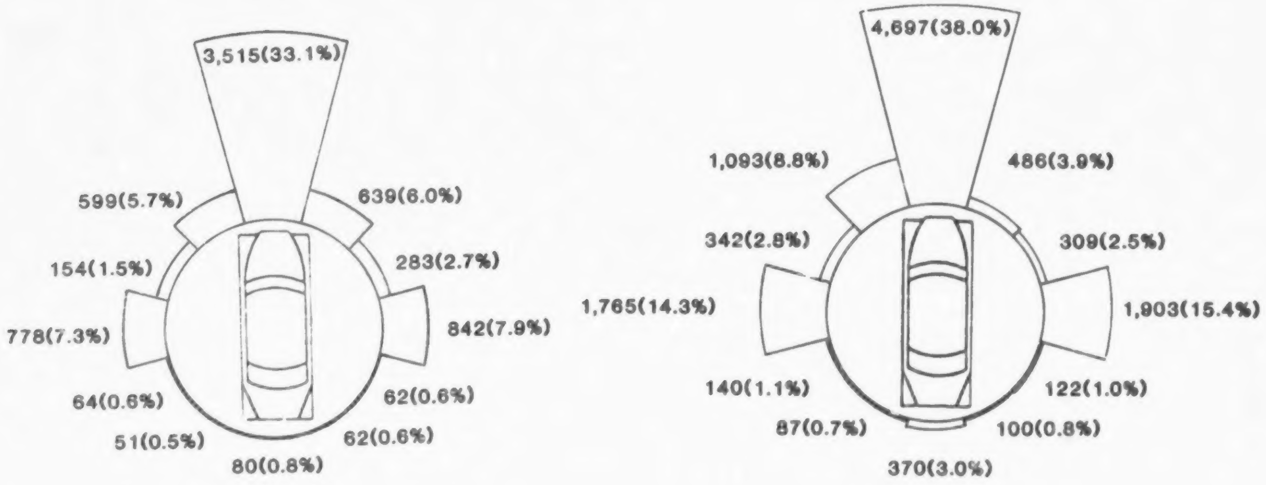
The impact points "top," "undercarriage" and "underride" are also included in Figure VI-7. "Top" was recorded when the vehicle incurred damage from hitting its top against an object during an accident, an example being a truck hitting a bridge overpass. "Undercarriage" refers to the underside of the vehicle. "Underride" refers to accidents in which a vehicle slides under another vehicle. The most common example is that of an automobile striking the rear or side of a tractor-trailer and continuing wholly or partly under the truck. The principal point of impact recorded for such an accident would be "underride" for the striking automobile and "undercarriage" for the struck truck.

Noncollision data are also included. When the only event in an accident is an overturn, for example, the accident is not considered a collision and impact points are not coded.

Frontal collisions were associated with almost half of all passenger car occupant deaths. Occupant deaths were about equal for left and right side collisions and, taken together, accounted for the second largest proportion of passenger car occupant deaths,

More than one in six (17.9 percent) passenger car occupant deaths in single vehicle accidents resulted from noncollision events (e.g., overturn, gas inhalation, vehicle fire, immersion).

FIGURE VI-7
DISTRIBUTION OF PASSENGER CAR OCCUPANT FATALITIES
BY POINT OF PRINCIPAL IMPACT
(22,975)



SINGLE VEHICLE ACCIDENTS
(10,603)

TOP 791(7.5%)
UNDERCARRIAGE 158(1.5%)
UNDERRIDE 14(0.1%)
NON-COLLISION 1,897(17.9%)
UNKNOWN 614(5.8%)

MULTI-VEHICLE ACCIDENTS
(12,372)

TOP 187(1.5%)
UNDERCARRIAGE 27(0.2%)
UNDERRIDE 116(0.9%)
NON-COLLISION 14(0.1%)
OVERRIDE 3(0.1%)
UNKNOWN 611(4.9%)

Significantly, although more than half (51.8 percent) of all passenger cars in fatal accidents were subcompact and compact cars, those cars accounted for almost 60 percent of all passenger car occupant deaths (Table VI-7). Small subcompact cars had 21.4 percent of the fatalities and only 17.6 percent of the involved passenger cars, while full size cars had 9.1 percent of the fatalities and 11.7 percent of the involved passenger cars.

While the number of passenger car fatalities and vehicles in fatal accidents dropped about 2.5 percent and 1.5 percent, respectively from 1982, the decline was not consistent among automobiles of all sizes. Fatalities in smaller cars increased while fatalities in intermediate and full size cars continued to drop.

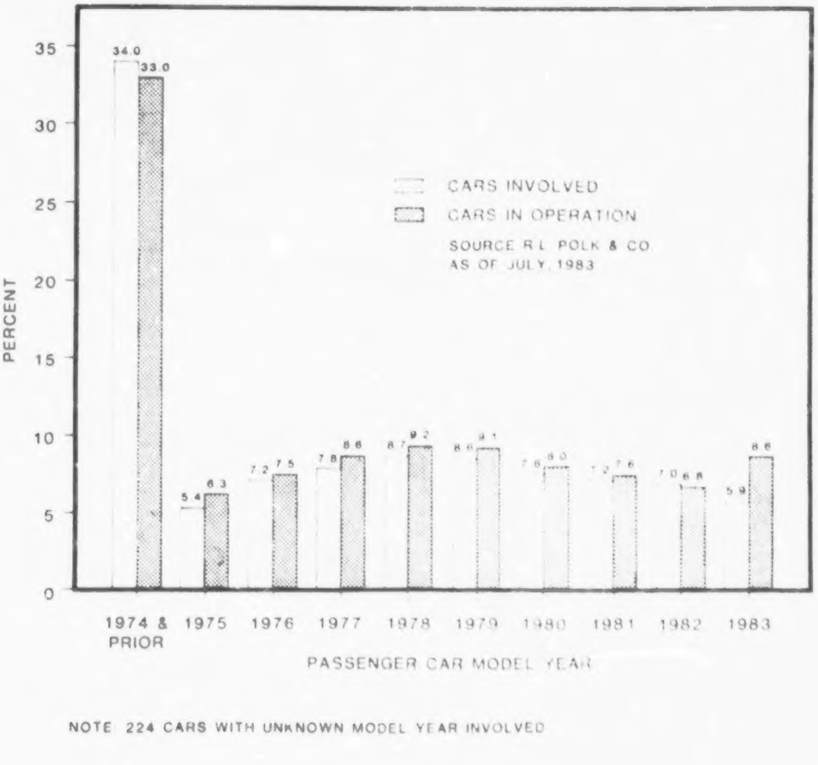
The model-year distribution of passenger cars involved in fatal accidents is compared to the model year distribution of passenger cars estimated by R.L. Polk and Company to be in operation as of 1983 (Figure VI-8). The newest model cars appear to be under-represented. Passenger cars 9 years old or older were involved in fatal accidents slightly more often than their representation in the total population would indicate.

TABLE VI-7
INVOLVED VEHICLES AND OCCUPANT FATALITIES BY VEHICLE SIZE
(Passenger Cars Only)

	Vehicles		Occupants		Occupant Fatalities	
Wheel Base	Number	%	Number	%	Number	%
Small Subcompact (Under 96 inches)	5,826	17.6	9,860	17.2	4,912	21.4
Subcompact (96 to 101 inches)	3,430	10.4	5,864	10.2	2,705	11.8
Compact (102 to 111 inches)	7,895	23.8	13,809	24.0	5,614	24.5
Intermediate (112 to 120 inches)	7,580	22.9	13,429	23.4	4,548	19.8
Full Size (Over 120 inches)	3,883	11.7	6,793	11.8	2,083	9.1
Unknown	4,507	13.6	7,668	13.4	3,097	13.5
Total	**33,121**	**100.0**	**57,423**	**100.0**	**22,959**	**100.0**

Note: There are 167 Passenger Cars which have no associated person records.

FIGURE VI-8
PASSENGER CAR INVOLVEMENT BY MODEL YEAR
(33,288)



NOTE 224 CARS WITH UNKNOWN MODEL YEAR INVOLVED

MOTORCYCLES

In 1983, motorcycle rider fatalities declined about 4 percent from 1982.* 4,103 motorcycle riders were killed in 4,043 accidents that involved 4,141 motorcycles. The six-year history in Figure VI-9 illustrates that while fatal motorcycle accidents increased from 1978 to 1980, the number of accidents, motorcycles involved, and riders killed all began to decline in 1981, a trend that continued through 1983. However, the number of rider fatalities continued to exceed the number of fatal motorcycle accidents. This is the only vehicle type for which this is true. When a motorcycle was involved in a fatal accident, at least one fatality as almost always a motorcycle rider: 0.99 motorcyclist died for every motorcycle involved in a fatal accident.

FIGURE VI-9
MOTORCYCLE INVOLVED FATAL ACCIDENTS AND RELATED FATALITIES FOR 1978-1983

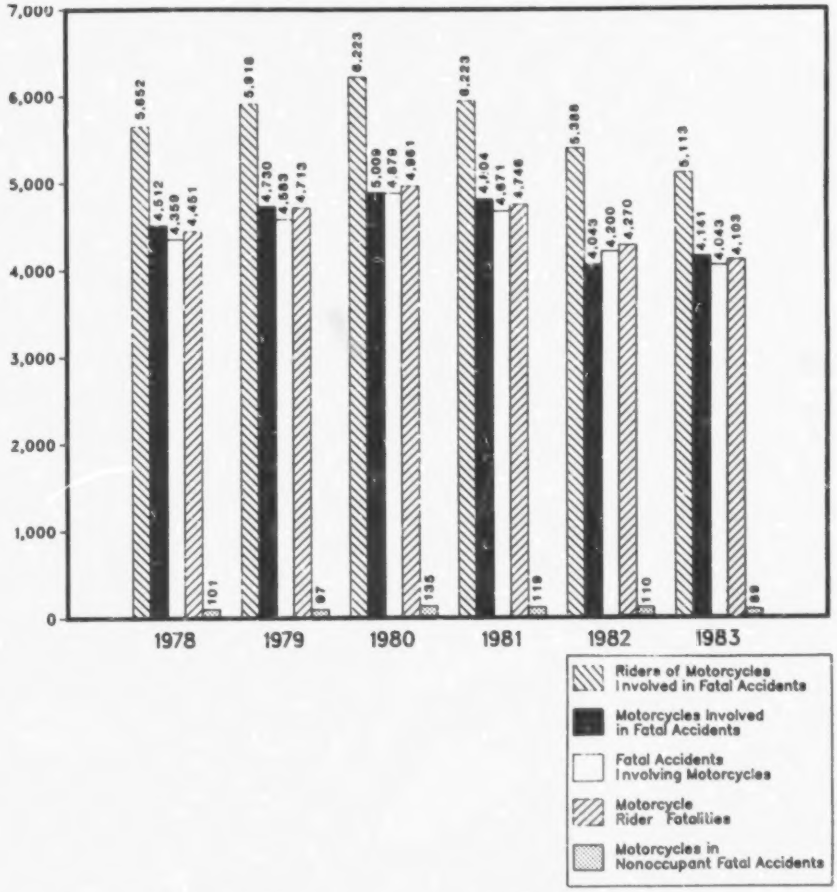


TABLE VI-6
INVOLVED VEHICLES, OCCUPANTS AND FATALITIES BY BODY TYPE FOR MOTORCYCLES

	Vehicles		Occupants		Occupant Fatalities	
	Number	%	Number	%	Number	%
Motorcycles	4,141	95.3	5,113	96.2	4,103	96.2
Other Motorized Cycles						
Moped	93	2.2	107	2.0	91	2.1
Other & Unknown Motorcycle	67	1.5	93	1.8	70	1.7
Total	4,301	100.0	5,313	100.0	4,264	100.0

---

*The term "motorcycles," as used in this section, does not include mopeds, motorscooters, minibikes, and motorcycle types not specifically named in the FARS file. The total number of riders, rider fatalities, fatal accidents, and motorcycle involvements associated with mopeds, motorscooters, minibikes and unknown type motorcycles, in addition to motorcycles, are shown in Table VI-8.

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As was the case with passenger cars, most motorcycles, (47.6 percent) involved in fatal accidents collided with other motor vehicles in transport (Figure VI-10). Motorcyclists were seldom in fatal accidents with pedestrians or bicyclists. However, motorcycles collided with "other fixed objects" 12.1 percent of the time, almost triple the rate of passenger car collisions in this category and more frequently than such collisions experienced by any other vehicle type considered in this chapter. As in fatal accidents involving passenger cars, collision with all types of "fixed objects" was cited more often for motorcycles than was "noncollision."

Of the 4,103 motorcycle riders killed in 1983, frontal impacts were associated even more often than was the case for passenger cars: 69.1 percent of motorcycle-rider deaths (Figure VI-11). Only 8.5 percent of the rider fatalities resulted from noncollision events, including overturns and falls from vehicles. As with passenger cars, little difference was found between fatality rates resulting from principal impacts to the left and right sides.

FIGURE VI-10
DISTRIBUTION OF MOTORCYCLES INVOLVED IN FATAL ACCIDENTS BY MOST HARMFUL EVENT
(4,141)

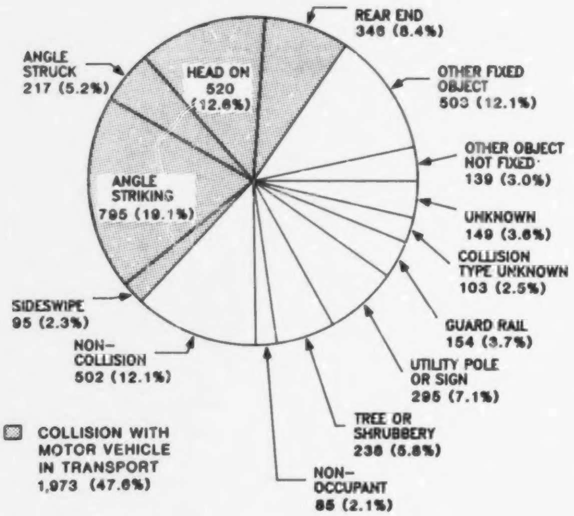
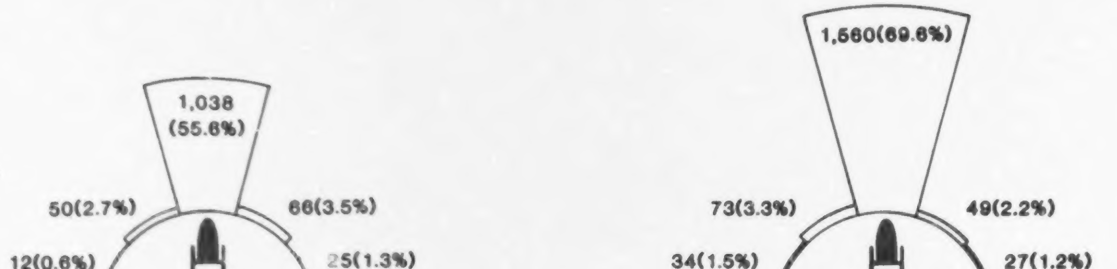


FIGURE VI-11
DISTRIBUTION OF MOTORCYCLE RIDER FATALITIES
BY POINT OF PRINCIPAL IMPACT
(4,103)



LIGHT TRUCKS

Fatal accidents and occupant deaths associated with light trucks* continued to decline in 1983, a trend that began in 1981 (Figure VI-12). The 5,379 light truck occupant deaths in 1983 represent a decrease from 1982 of 3.6 percent, a departure from the 10.5 percent average annual rate of increase that persisted from 1975 to 1979.

While pickup trucks were involved in fatal accidents almost five times as often as were vans and were carrying four times as many occupants, they had more than six times the number of the occupant deaths (Table VI-9).

FIGURE VI-12
LIGHT TRUCK INVOLVED FATAL ACCIDENTS AND RELATED FATALITIES FOR 1978 TO 1983

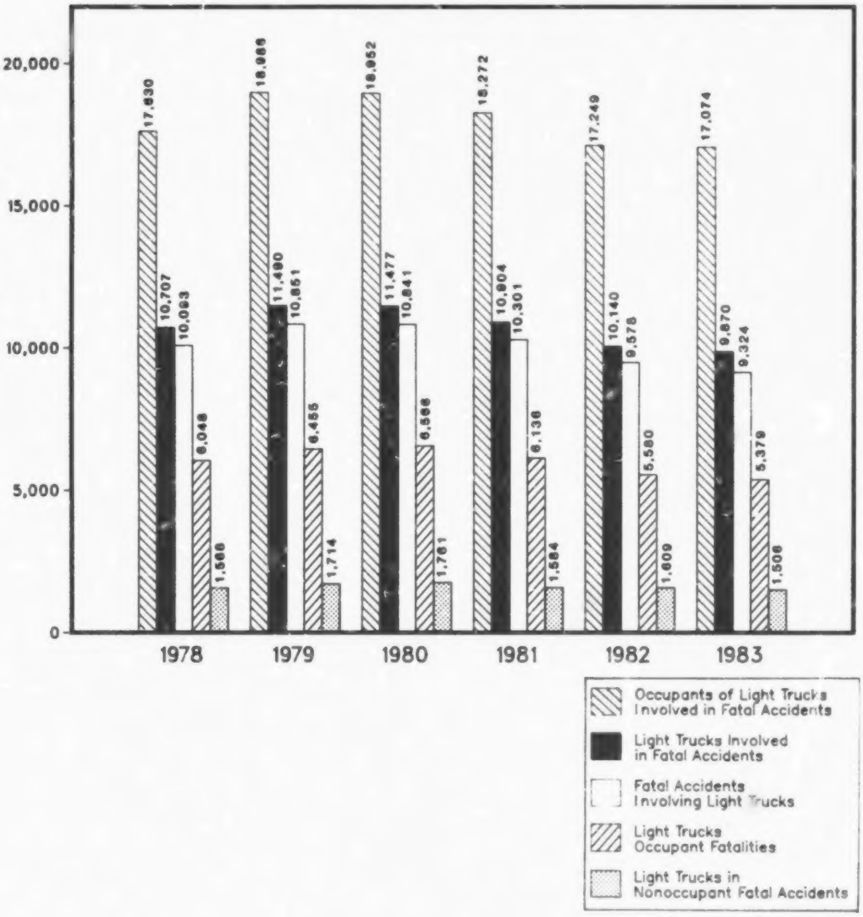


TABLE VI-9
INVOLVED VEHICLES, OCCUPANTS AND FATALITIES BY BODY TYPE FOR LIGHT TRUCKS

	Vehicles		Occupants		Occupant Fatalities	
	Number	%	Number	%	Number	%
Light Trucks						
Van	1,612	16.3	3,228	18.9	697	13.0
Pickup	7,828	79.3	13,122	76.9	4,496	83.6
Other Light Truck	273	2.8	481	2.8	115	2.1
Unknown Light Truck	157	1.6	243	1.4	71	1.3
Total	9,870	100.0	17,074	100.0	5,379	100.0

---

*Among light trucks were included pickups, vans, and truck-based station wagons.

The most harmful event reported for almost half (47.8 percent) of the 9,870 light trucks involved in 1983 fatal accidents (Figure VI-13) was collision with a motor vehicle in transport. Noncollision events were cited for another 20.3 percent, including falls from the vehicle, overturns, fires, explosions, gas inhalations, injury in the vehicle, immersions, and other noncollisions. This is substantially greater than noncollision events reported for passenger cars (12.8 percent).

Light trucks collided with non-occupants in 14.2 percent of the fatal accidents involving light trucks. This was almost the same as that reported for passenger cars (Figure VI-13 and Figure VI-6). Again, as with cars and motorcycles, frontal impacts accounted for the single largest share of occupant fatalities. In trucks of all sizes, the proportion of frontal occupant fatalities in multi-vehicle accidents is much greater than in single vehicle accidents. In this respect, trucks differ from automobiles and motorcycles where the proportion of frontal fatalities is roughly the same for single and multi-vehicle accidents.

FIGURE VI-13
DISTRIBUTION OF LIGHT TRUCKS INVOLVED IN FATAL ACCIDENTS BY MOST HARMFUL EVENT
(9,870)

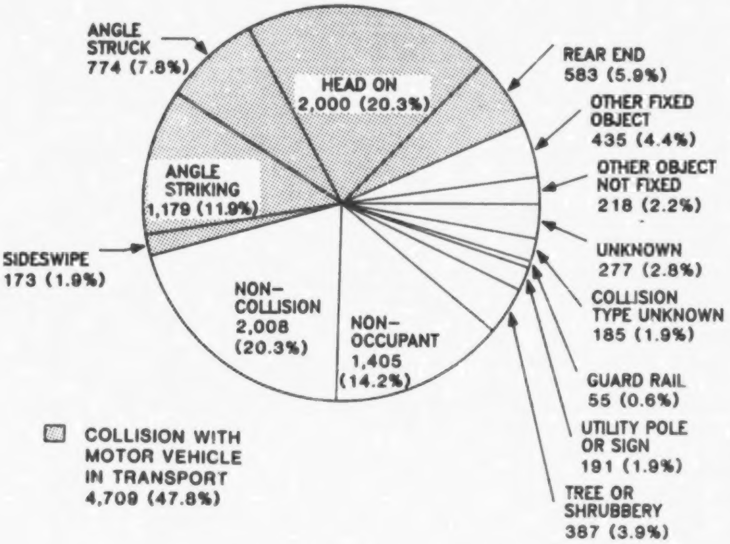
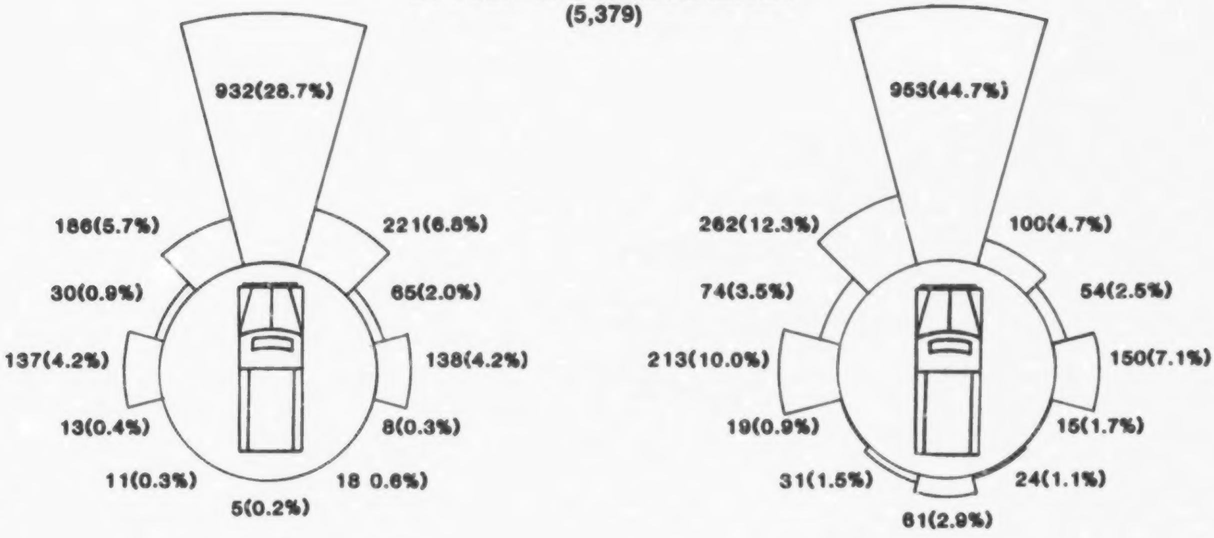


FIGURE VI-14
DISTRIBUTION OF LIGHT TRUCK OCCUPANT FATALITIES BY POINT OF PRINCIPAL IMPACT
(5,379)



TOP 238(7.3%)
UNDERCARRIAGE 54(1.7%)
UNDERRIDE 4(0.1%)
NON-COLLISION 1,093(33.6%)
UNKNOWN 98(3.0%)

TOP 71(3.3%)
UNDERCARRIAGE 10(0.5%)
UNDERRIDE 17(0.8%)
OVERIDE 1(0.1%)
NON-COLLISION 4(0.2)
UNKNOWN 69(3.2%)

MEDIUM TRUCKS

In 1983, 166 out of 868 occupants of medium* trucks were killed in a total of 657 fatal accidents. This is a slight increase (7.8 percent) from 154 in 1982. As might be expected, proportionately fewer occupants of these vehicles (1 of 5) were killed in fatal accidents than in automobiles (2 of 5) or light trucks (1 of 3).

The history of medium truck accidents and occupant deaths since 1978 is shown in Figure VI-15.

To an even greater degree than for other vehicle types, the most harmful event cited for most medium truck involvements in 1983 fatal accidents was one of the following (Figure VI-16):

- Collision with Motor Vehicle in Transport (59.1 percent)
- Noncollision (14.3 percent)
- Collision with Nonoccupant (12.4 percent)

FIGURE VI-15
MEDIUM TRUCK INVOLVED FATAL ACCIDENTS AND RELATED FATALITIES FOR 1978 TO 1983

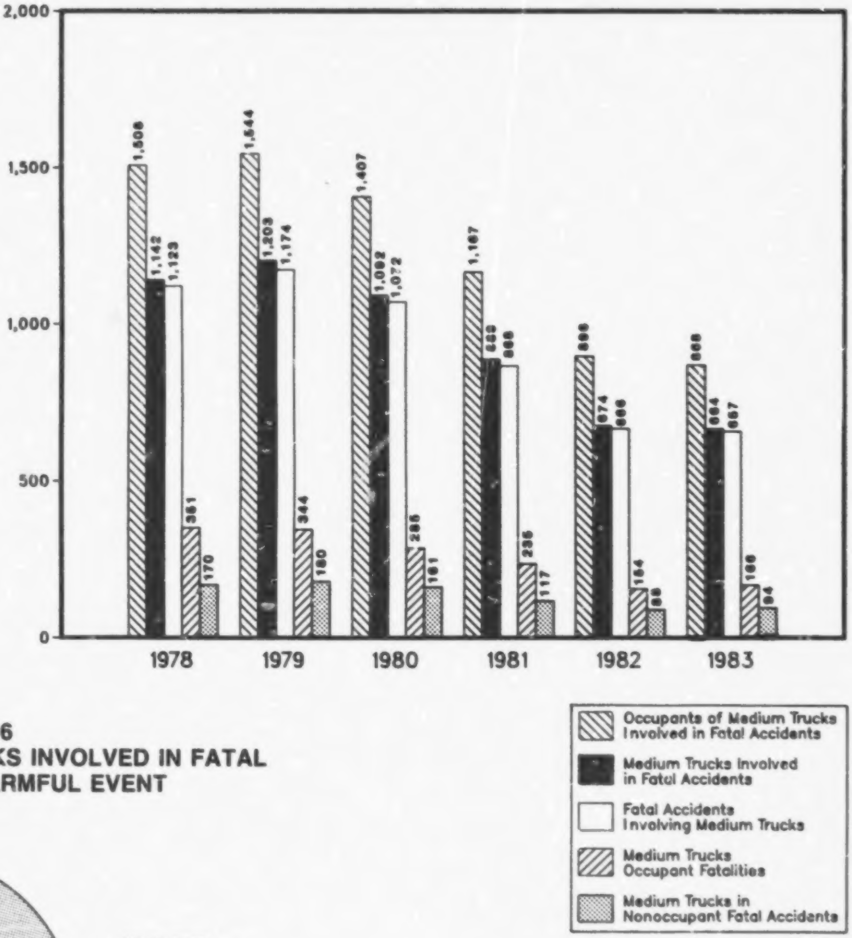
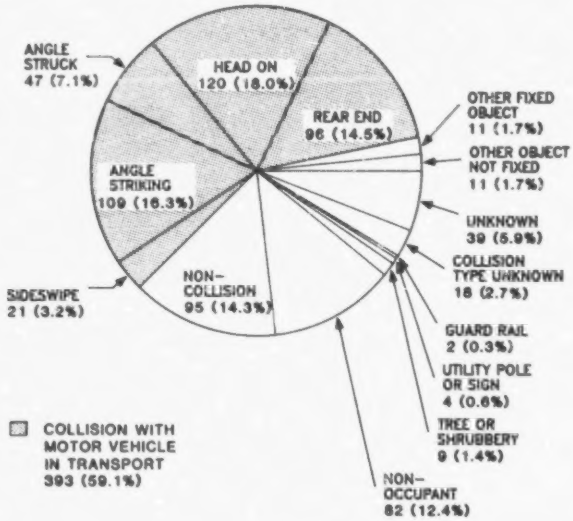


FIGURE VI-16
DISTRIBUTION OF MEDIUM TRUCKS INVOLVED IN FATAL ACCIDENTS BY MOST HARMFUL EVENT
(664)



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*"Medium trucks" are defined as single-unit trucks with gross vehicle weights (GVW) between 10,000 and 26,000 pounds. Single-unit trucks of unknown GVW are also included in this group.

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As with other vehicle types, frontal impacts caused a large share (27.7 percent) of occupant deaths (Figure VI-17). However, for this type of vehicle, noncollision accidents were the largest source of fatalities. In fact, medium trucks had the highest incidence of non-collision fatalities of all vehicles considered in this report.

In these vehicles, the proportion of frontal fatalities in multi-vehicle accidents was about 1.5 times their proportion in single vehicle accidents. In FARS, underride is not applicable for this type vehicle.

FIGURE VI-17
DISTRIBUTION OF MEDIUM TRUCK OCCUPANT FATALITIES BY POINT OF PRINCIPAL IMPACT
(166)

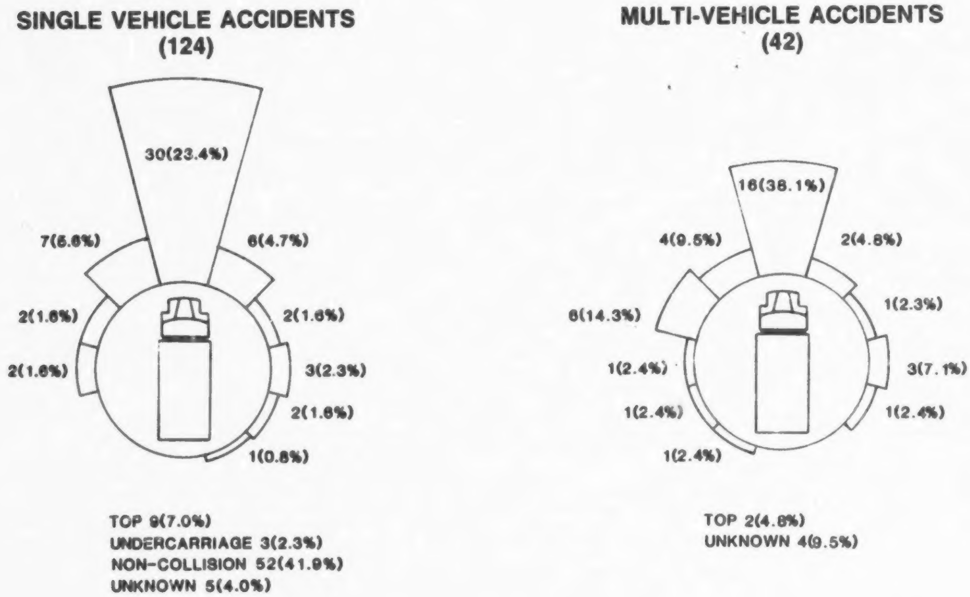

TABLE VI-10
INVOLVED VEHICLES, OCCUPANTS AND FATALITIES BY GROSS WEIGHT FOR MEDIUM TRUCKS

	Vehicles		Occupants		Occupant Fatalities	
	Number	%	Number	%	Number	%
Medium Trucks						
10,000 to 19,500 Lbs.	230	34.6	305	35.1	58	34.9
19,500 to 26,000 Lbs.	120	18.1	151	17.4	25	15.1
Unknown Gross Vehicle Weight	314	47.3	412	47.5	83	50.0
Total	664	100.0	868	100.0	166	100.0

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HEAVY TRUCKS

The number of heavy trucks* involved in fatal accidents increased from 1980 to 1981, declined in 1982 and rose again in 1983. The number of occupants who were killed in these trucks decreased continuously (Figure VI-18).

Two-thirds (66.2 percent) of the 4,174 heavy trucks involved in fatal accidents had a "collision with a motor vehicle in transport" as the most harmful event. This is a larger proportion than for ahy other vehicle type considered thus far (Figure VI-19). Conversely, the proportion of heavy trucks for which noncollisions were the most harmful event (11.6 percent) and the proportion for which collisions with nonoccupants (9.9 percent) were the most harmful event were both smaller than those of any of the other vehicle type except motorcycles.

FIGURE VI-18
HEAVY TRUCK INVOLVED FATAL ACCIDENTS AND RELATED FATALITIES FOR 1978-1983

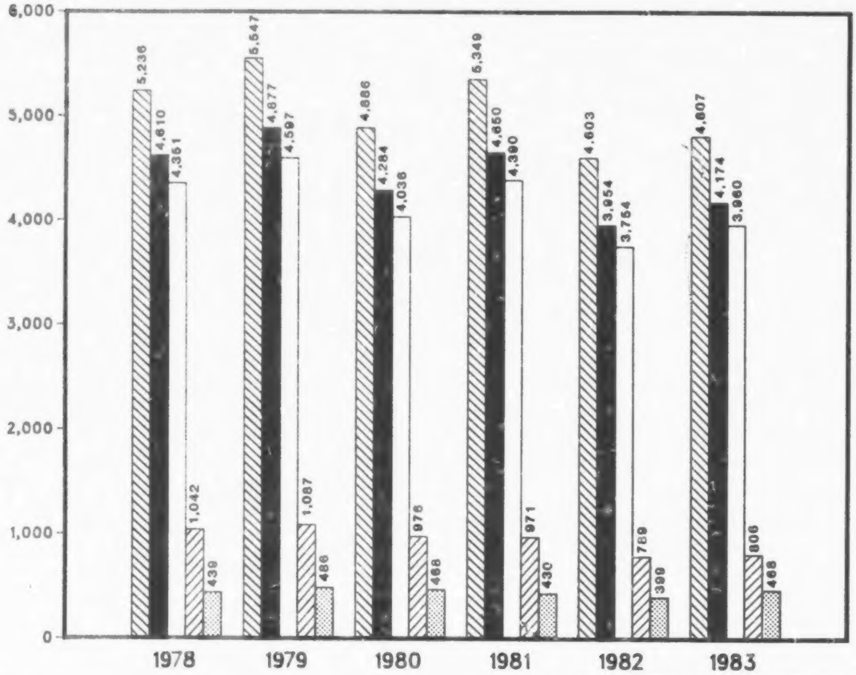
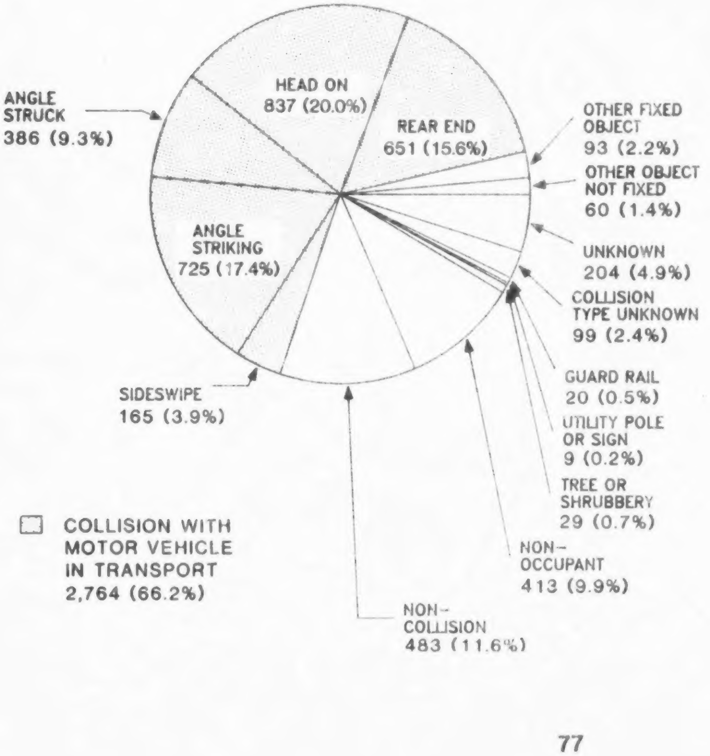


FIGURE VI-19
DISTRIBUTION OF HEAVY TRUCKS INVOLVED IN FATAL ACCIDENTS BY MOST HARMFUL EVENT
(4,174)



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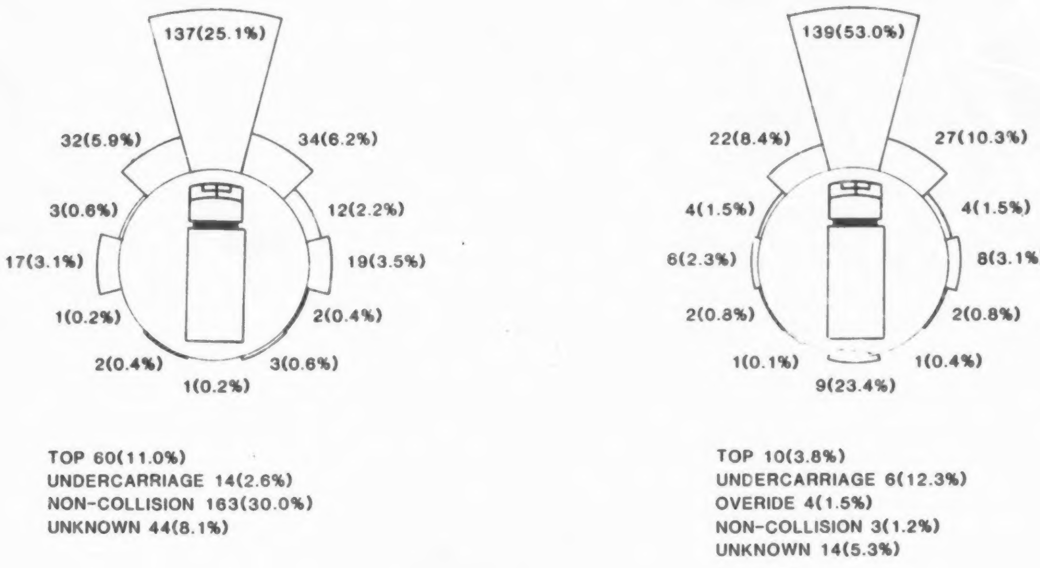
Vehicle size appears to correlate well with the likelihood of occupant fatality resulting from top impacts (Figure VI-20). As the size of the vehicle increases from motorcycle to heavy truck, the proportion of occupant deaths associated with top impacts also increases. Top impact was involved in 8.7 percent of 806 heavy truck occupant deaths.

As with other vehicle types, frontal impacts were associated with the largest proportion of occupant fatalities. However, the proportion of frontal fatalities in multi-vehicle heavy truck accidents is almost double that in single vehicle heavy truck accidents. Underride is not applicable to this vehicle type.

FIGURE VI-20
DISTRIBUTION OF HEAVY TRUCK OCCUPANT FATALITIES BY POINT OF PRINCIPAL IMPACT
(806)



SINGLE VEHICLE ACCIDENTS
(544)

MULTI-VEHICLE ACCIDENTS
(262)

TABLE VI-11
INVOLVED VEHICLES, OCCUPANTS AND FATALITIES BY TRAILING UNIT FOR HEAVY TRUCKS

	Vehicles		Occupants		Occupant Fatalities	
	Number	%	Number	%	Number	%
Heavy Trucks (Weight>26,000 lbs.)						
Single Unit	320	7.7	387	8.0	59	7.3
Truck Tractor	3,727	89.3	4,267	88.8	735	91.2
Unknown Heavy Truck	127	3.0	153	3.2	12	1.5
Total	**4,174**	**100.0**	**4,807**	**100.0**	**806**	**100.0**

*"Heavy trucks" include (1) single unit trucks with GVW greater than 26,000 pounds, (2) tractor-trailer combinations, (3) trucks with cargo trailer(s), and (4) truck-tractors pulling no trailer.

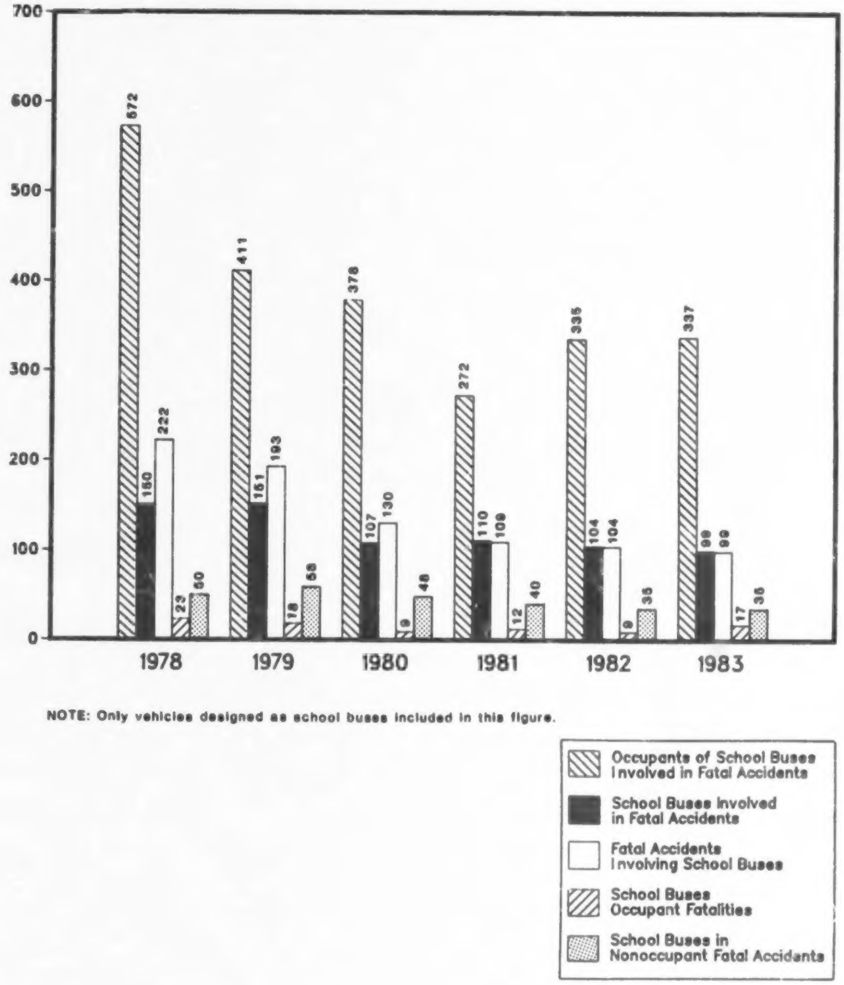
SCHOOL BUSES

This category includes both vehicles designed as buses and used in school transportation as well as vehicles of any body type functioning as school buses. (Figure VI-21 includes accidents, involvements and occupant fatalities for only those school buses designed as buses).

In FARS, a "school bus-related accident" is any fatal accident in which a vehicle functioning as a school bus is either directly or indirectly involved. Thus the category includes, for example, any accident in which a child disembarking from a school bus is struck by another vehicle. The fact that the child was struck after exiting the bus classes the accident as school bus-related even though the bus was neither a struck nor striking vehicle. Occupants of those vehicles which did not have the typical school bus body type but which were functioning as school buses were included with school bus occupants.

School bus-related accidents have steadily decreased since 1978 (Figure VI-21). Each year since 1978, between 9 and 23 occupants died in school bus accidents. Since 1980, fatal accidents involving school buses dropped 23.8 percent. The number of school buses involved in nonoccupant fatal accidents was at its lowest point since 1978. A smaller proportion (5 percent) of the occupants of school buses that were involved in fatal accidents in 1983 were themselves killed in those accidents than was the case for accident-involved occupants of any of the other vehicle types considered in this chapter. Table VI-12 displays data for school-type buses, whether or not they were used as school buses.

FIGURE VI-21
SCHOOL BUS RELATED FATAL ACCIDENTS AND RELATED FATALITIES FOR 1978 TO 1983



NOTE: Only vehicles designed as school buses included in this figure.

TABLE VI-12
INVOLVED VEHICLES, OCCUPANTS AND FATALITIES BY BUS TYPE

	Vehicles		Occupants		Occupant Fatalities	
	Number	%	Number	%	Number	%
Buses						
School Bus	99	32.4	337	30.7	17	32.1
Cross Country/Intercity Bus	41	13.4	176	16.0	9	17.0
Transit Bus	105	34.3	211	19.2	4	7.5
Other & Unknown Bus	61	19.9	375	34.1	23	43.4
Total	306	100.0	1,099	100.0	53	100.0

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The 99 school bus accidents in 1983 resulted in 139 deaths, 50 people who were killed were non-occupants and 89 were vehicle occupants, but only 13 of these were school bus occupants. In Figure VI-22, which presents a further distribution of these fatalities, "other driver" and "other passenger" were occupants of involved vehicles that were neither school buses nor vehicles being used as school buses.

The age distribution of the 44 pedestrians killed in the school bus accidents is depicted in Figure VI-23. Children under nine accounted for almost two-thirds of the pedestrian fatalities.

FIGURE VI-22
DISTRIBUTION OF FATALITIES IN FATAL ACCIDENTS INVOLVING SCHOOL BUSES
(139)

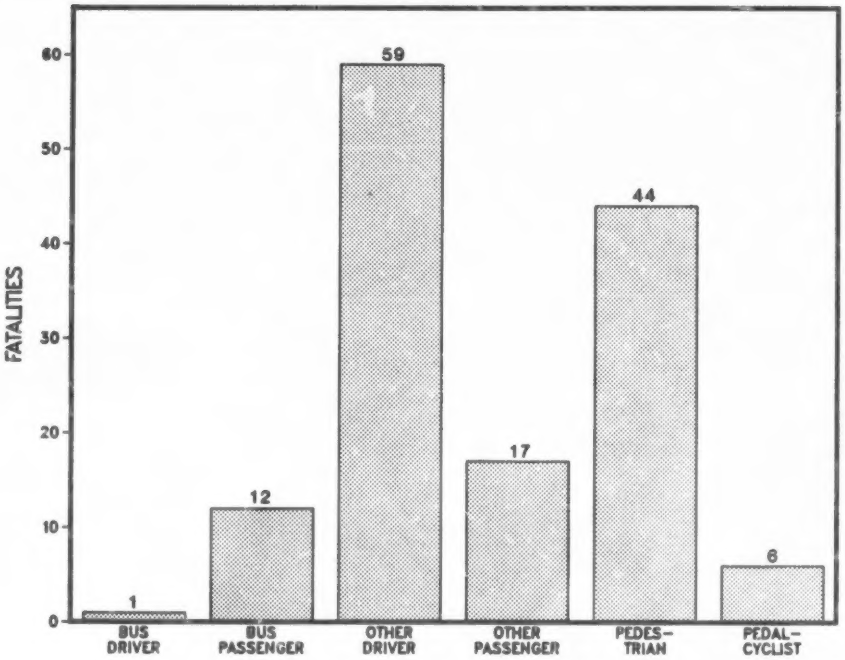
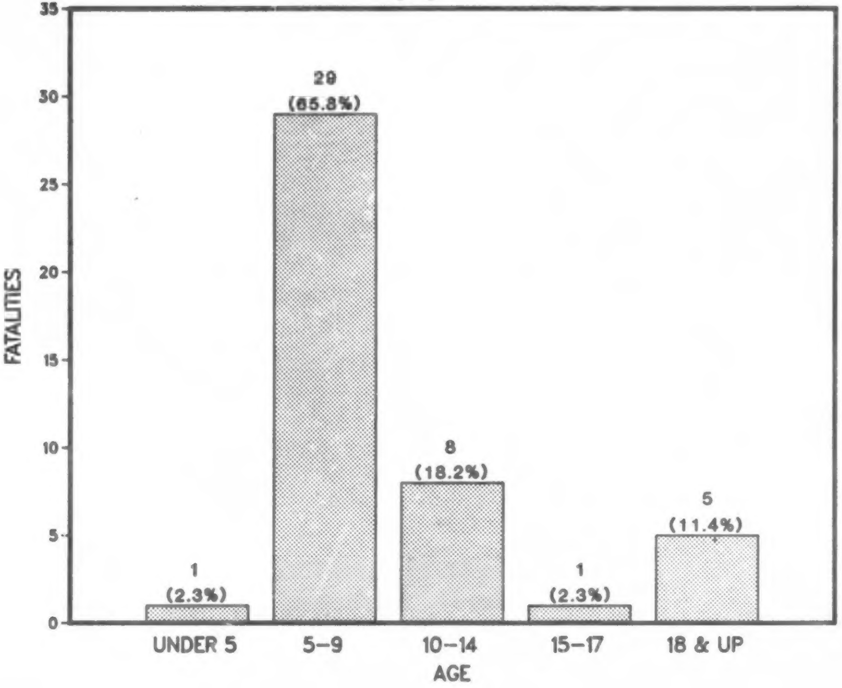


FIGURE VI-23
PEDESTRIAN FATALITIES IN FATAL SCHOOL BUS ACCIDENTS
(44)



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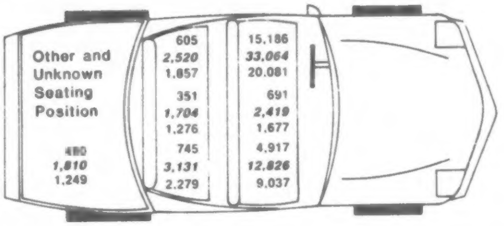
VII. Occupants

Four of every five people (81.8 percent) killed in traffic accidents in 1983 were occupants of a vehicle. Two-thirds (69.3) of these were drivers.

Of the total 34,840 occupants killed, 22,975 (66 percent) were occupants of passenger cars (Figure VII-1). Two-thirds of these (66.1 percent) were seated in what is customarily the driver's position, at the front left. Almost half (45.9 percent) of the 33,064 people in the left front seats of passenger cars involved in fatal accidents were killed.

In vehicles other than passenger cars, more occupants of the front left seat were killed than were occupants of other seating positions (Figure VII-2). Of the 21,595 occupants of the driver's position in these involved vehicles, 41.5 percent were killed.

FIGURE VII-1
PASSENGER CAR OCCUPANT
AND FATALITY SEATING POSITIONS



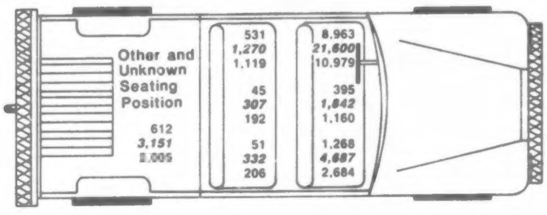
TOTAL

22,975 – Fatalities

57,474 - Occupants

37,456 – Occupants of vehicles in which a fatality occurred

FIGURE VII-2
NON-PASSENGER CAR OCCUPANT
AND FATALITY SEATING POSITIONS



TOTAL

11,865 – Fatalities

33,189 - Occupants

18,345 – Occupants of vehicles in which a fatality occurred

Drivers involved in fatal accidents in 1983 are classified according to age group and types of vehicle driven (Table VII-1). Other motorized cycles (mopeds, minibikes, motorscooters, and others) are included to provide driver-age distributions for these types of vehicles. A distribution by single and multi-vehicle accident involvement is also included.

One-third (33.3 percent) of all drivers involved in fatal accidents in 1983 were less than 25 years old. Almost half of the involved motorcycle drivers (48.2 percent) and about one-third of the drivers of involved passenger cars (36.2 percent) and light trucks (29.9 percent) were under 25. Almost one-quarter of the drivers of Mopeds and other motorized cycles (excluding motorcycles) were under 15. A majority of heavy truck and bus drivers involved in fatal accidents were 35 or older. Drivers 25 to 34 years old had about equal representation in single and multi-vehicle accidents: older drivers were in a larger share of multi-vehicle accidents while younger drivers were in a larger share of single vehicle accidents.

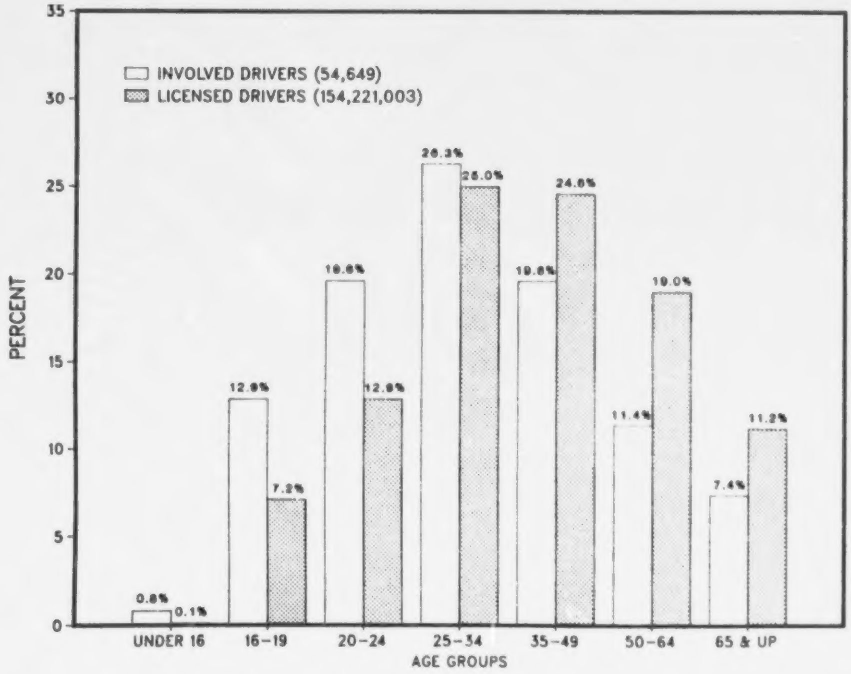
TABLE VII-1
DRIVERS INVOLVED IN FATAL ACCIDENTS BY VEHICLE TYPE, ACCIDENT TYPE AND AGE
(54,649)

	Under 15		15 to 17		18 to 20		21 to 24		25 to 34		35 to 44		45 to 54		55 to 64		Over 64	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Passenger Cars	44	0.1	2,030	6.1	4,617	14.0	5,284	16.0	8,025	24.3	4,315	13.1	2,762	8.4	2,446	7.4	3,239	9.8
Motorcycles	70	1.7	232	5.6	692	16.8	996	24.1	1,456	35.3	458	11.1	124	3.0	60	1.5	30	0.7
Other Motorized Cycles	38	23.9	28	17.6	19	11.9	10	6.3	20	12.6	9	5.7	8	5.0	7	4.4	19	11.9
Light Trucks	22	0.2	412	4.2	1,058	10.8	1,433	14.7	2,809	28.7	1,642	16.8	999	10.2	757	7.7	582	6.0
Medium Trucks			5	0.8	37	5.7	100	15.7	202	31.7	121	19.0	95	14.9	54	8.4	21	3.2
Heavy Trucks			5	0.1	66	1.6	340	8.3	1,356	33.0	1,117	27.2	790	19.2	369	9.0	41	1.0
Buses			1	0.3	5	1.6	11	3.6	79	26.0	98	32.2	58	19.1	44	14.5	8	2.6
Special Vehicles	26	1.8	114	7.7	187	12.6	218	14.4	423	28.0	250	16.5	117	7.7	100	6.6	68	4.6
Unknown	3	0.3	12	1.2	26	2.7	40	4.2	99	10.3	56	5.8	37	3.9	25	2.6	18	1.9
Total	203	0.4	2,839	5.2	6,707	12.3	8,432	15.4	14,469	26.5	8,066	14.8	4,990	9.1	3,862	7.1	4,026	7.4
Accident Type																		
Single Vehicle	80	0.3	1,409	6.1	3,314	14.5	3,958	17.3	6,086	26.6	3,059	13.3	1,739	7.6	1,294	5.6	1,171	5.1
Multi-Vehicle	123	0.4	1,430	4.5	3,393	10.7	4,474	14.1	8,383	26.4	5,007	15.8	3,251	10.2	2,568	8.1	2,855	9.0

Figure VII-3 compares drivers in fatal accidents with licensed drivers by age. Young drivers have far more fatal accidents per licensee than do older drivers.

As in previous years, Fridays and Saturdays proved to be the worst days for drivers to be on the road (36.9 percent of the 54,649 driver involvements in fatal accidents) and nighttime and early morning hours (4:00 p.m. to 12:00 a.m.) were the worst times (44.4 percent). Although the number of drivers in fatal accidents fell 2.5 percent in 1983, that reduction was not uniform throughout the week nor was it consistent during any 24-hour period (Table VII-2 and Table VII-3).

FIGURE VII-3
DRIVERS IN FATAL ACCIDENTS VERSUS LICENSED DRIVERS BY AGE



NOTE: 1055 INVOLVED DRIVERS WITH UNKNOWN AGE.

TABLE VII-2
DRIVERS IN FATAL ACCIDENTS BY AGE AND DAY OF WEEK
(54,649)

	Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Under 15	34	16.7	26	12.8	28	13.8	30	14.8	18	8.9	27	13.3	40	19.7	203	100.0
15 to 17	453	16.0	287	10.1	278	9.8	276	9.7	324	11.4	566	19.9	655	23.1	2,839	100.0
18 to 20	1,192	17.8	688	10.3	664	9.9	705	10.5	775	11.6	1,084	16.2	1,598	23.8	6,707	100.0
21 to 24	1,451	17.2	840	10.0	887	10.5	883	10.5	1,037	12.3	1,354	16.1	1,980	23.5	8,432	100.0
25 to 34	2,224	15.4	1,570	10.9	1,661	11.5	1,708	11.8	1,930	13.3	2,465	17.0	2,910	20.1	14,469	100.0
35 to 44	1,054	13.1	929	11.5	1,024	12.7	1,087	13.5	1,096	13.6	1,362	16.9	1,513	18.8	8,066	100.0
45 to 54	618	12.4	620	12.4	638	12.8	688	13.8	749	15.0	853	17.1	824	16.5	4,990	100.0
55 to 64	474	12.3	484	12.5	530	13.7	528	13.7	608	15.7	624	16.2	613	15.9	3,862	100.0
Over 64	472	11.7	553	13.7	605	15.0	534	13.3	595	14.8	701	17.4	564	14.0	4,026	100.0
Unknown	202	19.2	104	9.9	89	8.4	109	10.4	115	10.9	164	15.6	270	25.6	1,055	100.0
Total	8,174	15.0	6,101	11.2	6,404	11.7	6,548	12.0	7,247	13.3	9,200	16.8	10,967	20.1	54,649	100.0

Note: 8 Drivers with unknown Day of Week are included in the Total Column.

Decreases that occurred on Sundays and Fridays (8.8 percent and 4.5 percent respectively), were offset by slight increases on Tuesdays and Thursdays (3.2 percent and .7 percent respectively). During the morning (8:00 a.m. to noon) and early evening hours (4:00 p.m. to 8:00 p.m.) driver involvement increased (4.9 percent and 2 percent respectively), while sizable decreases occurred from 8:00 p.m. to midnight (6.8 percent) and from midnight to 4:00 a.m. (8.8 percent).

When correlated with age, some revealing patterns emerge (Table VII-2). Fatal accident involvement is:

- Above average on Saturdays and Sundays for drivers under 35.
- Above average from Mondays through Thursdays for drivers over 35.
- Above average on Fridays for drivers 25-54.

Table VII-3 reveals still more interesting age-related patterns.

- Almost 60 percent of all fatal accidents that involved elderly drivers occurred between 8:00 a.m. and 4:00 p.m.
- The average age of drivers decreases as the time of fatal accidents gets later except:
  More than 70 percent of all fatal accidents that involve drivers under 15 occurred between noon and 8:00 p.m.

TABLE VII-3
DRIVERS IN FATAL ACCIDENTS BY AGE AND TIME OF DAY

	8am to Noon		Noon to 4pm		4pm to 8pm		8pm to 12am		12am to 4am		4am to 8am		Unknown		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Under 15	20	9.9	56	27.6	87	42.9	22	10.8	17	8.4	1	0.5			203	100.0
15 to 17	229	8.1	464	16.3	682	24.0	845	29.8	429	15.1	183	6.4	7	0.2	2,839	100.0
18 to 20	432	6.4	880	13.1	1,289	19.2	1,635	24.4	1,872	27.9	580	8.6	19	0.3	6,707	100.0
21 to 24	664	7.9	951	11.3	1,779	21.1	1,867	22.1	2,286	27.1	841	10.0	44	0.5	8,432	100.0
25 to 34	1,426	9.9	2,060	14.2	3,283	22.7	3,275	22.6	2,994	20.7	1,368	9.5	63	0.4	14,469	100.0
35 to 44	889	11.0	1,351	16.7	2,010	24.9	1,681	20.8	1,318	16.3	788	9.8	29	0.4	8,066	100.0
45 to 54	684	13.7	1,017	20.4	1,291	25.9	951	19.1	546	10.9	480	9.6	21	0.4	4,990	100.0
55 to 64	704	18.2	935	24.2	970	25.1	608	15.7	285	7.4	350	9.1	10	0.3	3,862	100.0
Over 64	1,042	25.9	1,312	32.6	1,008	25.0	339	8.4	101	2.5	208	5.2	16	0.4	4,026	100.0
Unknown	34	3.2	63	6.0	170	16.1	345	32.7	317	30.0	97	9.2	29	2.7	1,055	100.0
Total	6,124	11.2	9,009	16.6	12,569	23.0	11,568	21.2	10,165	18.6	4,896	9.0	238	0.4	54,649	100.0

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The previous driving records of the 54,649 drivers involved in fatal accidents are shown in Table VII-4. This group excludes drivers who fled the scene, leaving their vehicles at the accident. In determining previous driving records FARS only counts those offenses that occurred in the three years prior to the 1983 fatal accident. Figure VII-4 shows the driving record of those 21,820 drivers who had at least one previous harmful moving violation, demonstrating the frequency of multiple convictions.

FIGURE VII-4
INVOLVED DRIVERS WITH AT LEAST ONE PREVIOUS OFFENSE

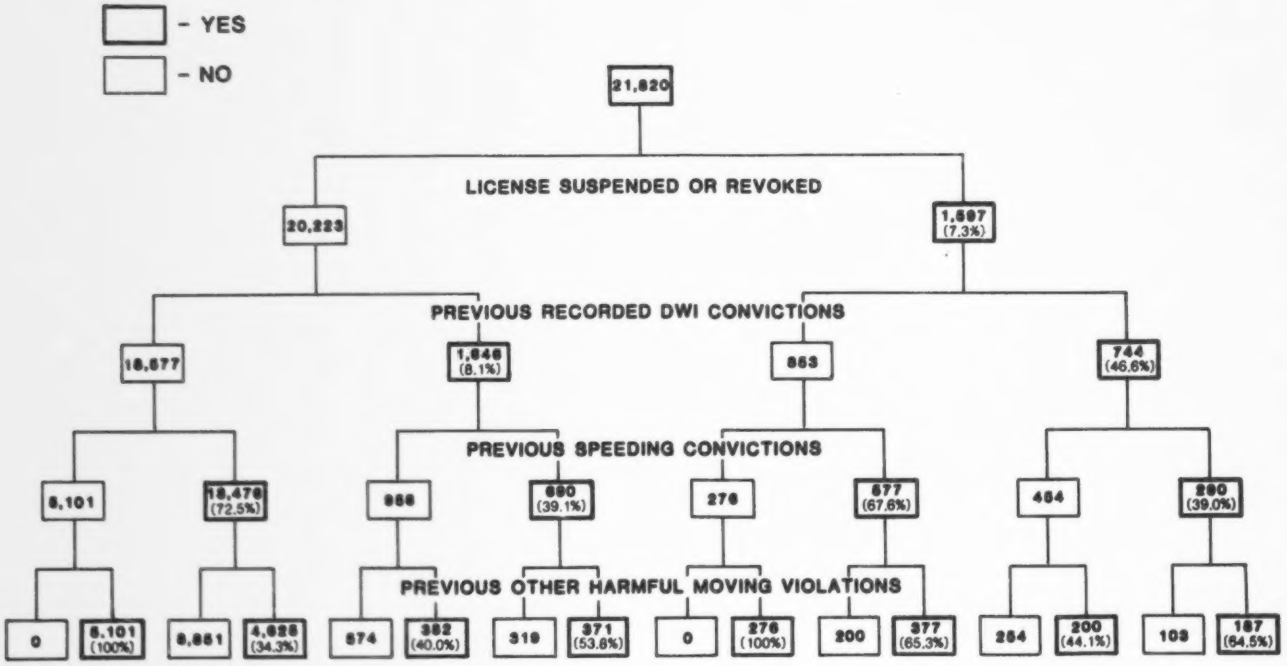

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Table VII-4 and Figure VII-4 also show driver license status. A driver was considered licensed if a valid license was held for the vehicle being operated, if no license was required, or if a learner's permit was held. A driver was considered unlicensed if no license was held when one was required, if the license held was not for the type of vehicle being operated, or if the license was suspended, revoked, or had expired.

Although most involved drivers had no previous recorded violations, this majority was lowest for speeding violations (68.1 percent). Also, in every category other than speeding convictions, a higher proportion of unlicensed drivers had multiple previous convictions recorded than did licensed drivers. The greatest number of previous multiple convictions were, in descending order, for speeding, other moving violations, and previous accidents, whereas among unlicensed drivers the descending order of previous multiple/convictions was for suspensions/revocations, other moving violations, and previous accidents. More unlicensed drivers had previous recorded convictions for driving while intoxicated (DWI) than did licensed drivers.

TABLE VII-4
DRIVERS IN FATAL ACCIDENTS BY TYPE AND BY NUMBER OF PREVIOUS VIOLATIONS
(54,649)

	None		One		Two		Three		Four		Five or More		Unknown		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Previous Accidents																
Invalid License	3,753	70.6	798	15.0	222	4.2	60	1.1	14	0.3	4	0.1	467	8.8	5,318	100.0
Valid License	38,924	82.0	6,651	14.0	1,377	2.9	319	0.7	70	0.1	41	0.1	68	0.1	47,450	100.0
Unknown	10	0.5	1	0.1									1,870	99.4	1,881	100.0
Total	42,687	78.1	7,450	13.6	1,599	2.9	379	0.7	84	0.2	45	0.1	2,405	4.4	54,649	100.0
Previous License Suspensions																
Invalid License	2,985	56.1	1,099	20.7	402	7.6	176	3.3	79	1.5	110	2.1	467	8.8	5,318	100.0
Valid License	44,418	93.6	2,134	4.5	519	1.1	172	0.4	78	0.2	61	0.2	68	0.1	47,450	100.0
Unknown	10	0.5	1	0.1									1,870	99.4	1,881	100.0
Total	47,413	86.8	3,234	5.9	921	1.7	348	0.6	157	0.3	171	0.3	2,405	4.4	54,649	100.0
Previous Driving While Intoxicated Violations																
Invalid License	3,954	74.4	663	12.5	167	3.1	48	0.9	12	0.2	7	0.1	467	8.8	5,318	100.0
Valid License	45,891	96.7	1,334	2.8	139	0.3	15	0.0	3	0.0			68	0.1	47,450	100.0
Unknown	10	0.5	1	0.1									1,870	99.4	1,881	100.0
Total	49,855	91.2	1,998	3.7	306	0.6	63	0.1	15	0.0	7	0.0	2,405	4.4	54,649	100.0
Previous Speeding Violations																
Invalid License	3,368	63.3	776	14.6	385	7.2	169	3.2	69	1.3	84	1.6	467	8.8	5,318	100.0
Valid License	33,835	71.3	8,391	17.7	3,071	6.5	1,179	2.5	517	1.1	389	0.8	68	0.1	47,450	100.0
Unknown	10	0.5			1	0.1							1,870	99.4	1,881	100.0
Total	37,213	68.1	9,167	16.8	3,457	6.3	1,348	2.5	586	1.1	473	0.9	2,405	4.4	54,649	100.0
Previous Other Moving Violations																
Invalid License	3,219	60.5	867	16.3	386	7.3	175	3.3	93	1.7	111	2.1	467	8.8	5,318	100.0
Valid License	37,499	79.0	6,945	14.6	1,904	4.0	621	1.3	232	0.5	181	0.4	68	0.1	47,450	100.0
Unknown	9	0.5	1	0.1	1	0.1							1,870	99.4	1,881	100.0
Total	40,727	74.5	7,813	14.3	2,291	4.2	796	1.5	325	0.6	292	0.5	2,405	4.4	54,649	100.0

MOTORCYCLE RIDERS

The largest number (61.3 percent) of motorcycle riders died in states without helmet use requirements (Table VII-5). More than 80 percent of all motorcyclists involved in fatal accidents were killed. Almost two-thirds (64.8 percent) of all fatally injured motorcyclists were not wearing helmets. In states that required helmet use, 39.3 percent of the fatally injured motorcyclists were not wearing helmets. In states that had no such law, 80.9 percent of fatally injured cyclists were not wearing a helmet. Because of the very high fatality rate of all motorcyclists involved in fatal accidents, no conclusions about the effectiveness of helmets should be drawn from FARS data.

The data in Table VII-5 do not attempt to relate the effectiveness of the mandatory helmet use laws on helmet usage or fatal injury reduction. FARS data do not include cases where the helmet may have saved the life of the rider. Other studies sponsored by NHTSA* have found that helmetless motorcycle riders receive injuries to the head or neck two to three times as often as do helmeted riders. These data are confirmed by the National Accident Sampling System (NASS).

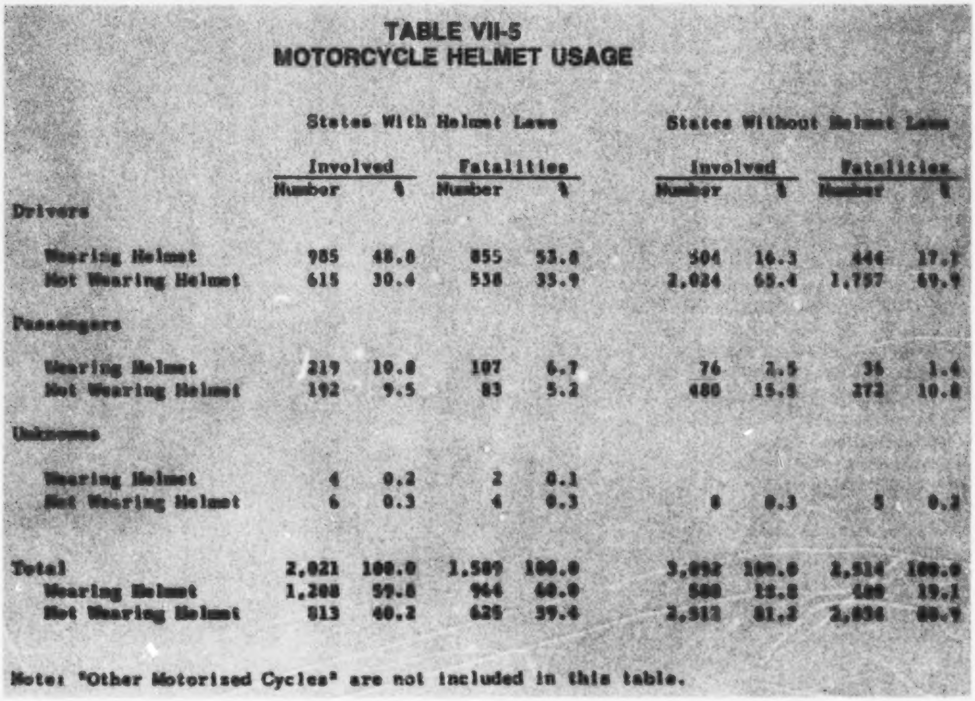

TABLE VII-5
MOTORCYCLE HELMET USAGE

	States With Helmet Laws				States Without Helmet Laws			
	Involved		Fatalities		Involved		Fatalities	
	Number	%	Number	%	Number	%	Number	%
Drivers								
Wearing Helmet	985	48.8	855	53.8	504	16.3	444	17.7
Not Wearing Helmet	615	30.4	538	33.9	2,024	65.4	1,757	69.9
Passengers								
Wearing Helmet	219	10.8	107	6.7	76	2.5	36	1.4
Not Wearing Helmet	192	9.5	83	5.2	480	15.5	272	10.8
Unknowns								
Wearing Helmet	4	0.2	2	0.1				
Not Wearing Helmet	6	0.3	4	0.3	8	0.3	5	0.2
Total	2,021	100.0	1,589	100.0	3,092	100.0	2,514	100.0
Wearing Helmet	1,208	59.8	964	60.6	580	18.8	480	19.1
Not Wearing Helmet	813	40.2	625	39.4	2,512	81.2	2,034	80.9

Note: "Other Motorized Cycles" are not included in this table.

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*University of Southern California, 1980, Report No. DOT-HS-805-862.
University of Kansas, 1980, Report No. DOT-HS-805-773.
Department of Highways, State of Colorado, 1980, Report No. DOT-HS-805-627
University of South Dakota, 1980, Report No. DOT-HS-805-619.

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VIII. Non-Occupants

Nonoccupants constituted 7,744 of the traffic deaths in 1983--about one out of every five (18.2 percent) traffic fatalities. Of these, 88 percent (6,824) were pedestrians, and 10.8 percent (839) were pedalcyclists. The others include occupants of parked vehicles and people riding on animals or animal-drawn conveyances. Nonoccupant fatalities declined 6.7 percent from 1982, a decline substantially more than the 2.3 percent drop in occupant fatalities.

Most fatally injured nonoccupants (93 percent) were killed in single vehicle accidents. Most often they were hit by passenger cars (61.8 percent). About 20 percent were hit by light trucks and another 5.7 percent were hit by heavy trucks (Table VIII-1).

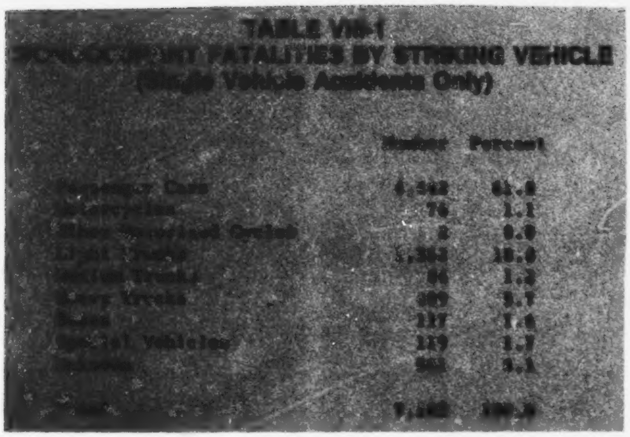

TABLE VIII-1
NONOCCUPANT FATALITIES BY STRIKING VEHICLE
(Single Vehicle Accidents Only)

	Number	Percent
Passenger Cars	4,442	61.8
Motorcycles	76	1.1
Other Motorized Cycles	2	0.0
Light Trucks	1,363	18.9
Medium Trucks	94	1.3
Heavy Trucks	409	5.7
Buses	117	1.6
Special Vehicles	119	1.7
Unknown	[illegible]	5.1
Total	[illegible]	100.0

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Nonoccupants involved in fatal accidents had a much greater chance of death (89.6 percent) than did occupants (38.4 percent). Therefore, in many cases, the involvement of a nonoccupant contributed heavily to the accident being a fatal one. The age distributions of fatally injured occupants and nonoccupants are quite dissimilar (Table VIII-2). More than two-thirds (69.1 percent) of all involved occupants, whether killed or not, were between 15-44 years old, while fewer than half (45.4 percent) of the involved nonoccupants were between these ages. The same was true for those who were fatally injured. Two of every five fatally injured nonoccupants were either under 15 or over 64.

Almost twice as many pedestrians and about one-half more pedalcyclists were killed in urban areas as in rural areas (Figure VIII-1).

FIGURE VIII-1
NONOCCUPANT FATALITIES BY LAND USE
(7,744)

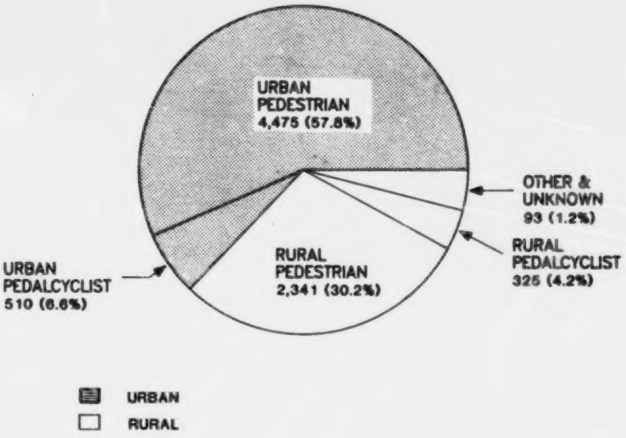

TABLE VIII-2
ALL OCCUPANTS AND NONOCCUPANTS BY AGE

	Occupants				Non-occupants				Total			
	Involved		Fatalities		Involved		Fatalities		Involved		Fatalities	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
[illegible]	7,021	7.1	1,600	4.6	1,673	19.4	1,496	19.3	8,694	8.8	3,096	7.3
[illegible]	7,260	8.0	2,395	6.9	435	5.0	353	4.6	7,695	7.7	2,748	6.5
[illegible]	11,954	13.2	4,674	13.4	586	6.8	492	6.4	12,540	12.6	5,166	12.1
[illegible]	13,012	14.4	5,387	15.4	772	8.9	663	8.6	13,784	13.9	6,050	14.2
[illegible]	19,797	21.8	7,984	22.9	1,334	15.4	1,171	15.1	21,131	21.4	9,158	21.5
[illegible]	10,601	11.7	4,058	11.6	805	9.3	719	9.3	11,406	11.5	4,777	11.2
[illegible]	6,697	7.4	2,634	7.6	678	7.8	626	8.1	7,375	7.4	3,260	7.7
[illegible]	5,421	6.0	2,418	6.9	736	8.5	690	8.9	6,157	6.2	3,108	7.3
[illegible]	6,339	7.0	3,651	10.5	1,480	17.1	1,425	18.4	7,819	7.9	5,076	11.9
[illegible]	2,561	2.8	82	0.2	142	1.6	109	1.4	2,703	2.7	191	0.4
[illegible]	90,663	100.0	34,840	100.0	8,641	100.0	7,744	100.0	99,304	100.0	42,584	100.0

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About 80 percent of the nonoccupant deaths occurred away from intersections. Most (71.4 percent) also were considered "on the roadway" when they were hit (Table VIII-3).

PEDESTRIANS

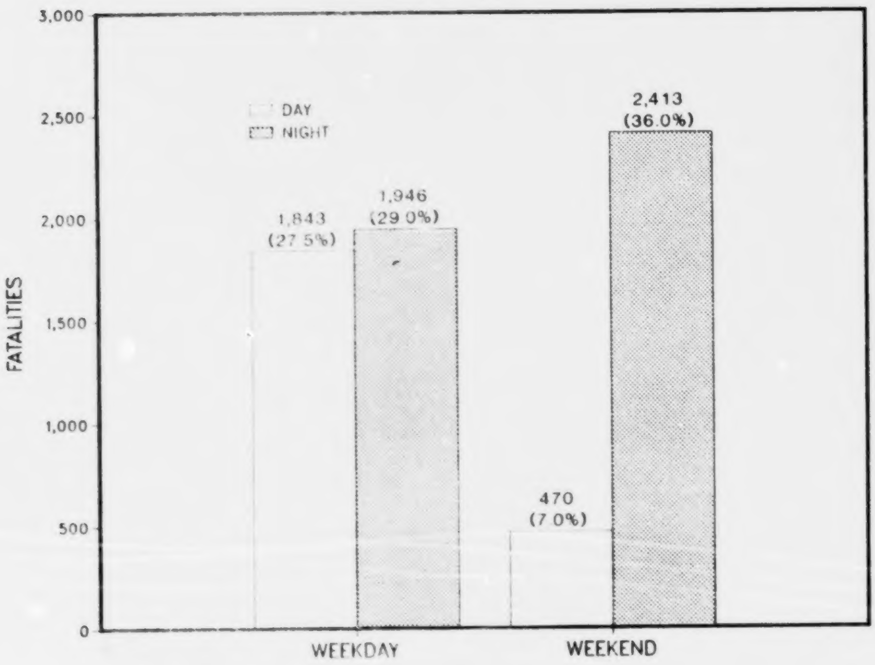
A total of 6,702 pedestrian accidents occurred in 1983, in which 6,824 pedestrians were killed.

More than half (56.5 percent) of all fatal pedestrian accidents occurred during the week, most often at night (Figure VIII-2).

TABLE VIII-3
NONOCCUPANT FATALITIES BY LAND USE,

	Urban	Rural	Unknown	Total
Intersection				
In Crosswalk	384	19		403
On Roadway	755	202		957
Other & Unknown	41	7	1	49
Non-Intersection				
In Crosswalk	31	14		45
On Roadway	3,388	2,131	9	5,528
Other & Unknown	399	292	1	692
Unknown	32	37	1	70
Total	**5,030**	**2,702**	**12**	**7,744**

FIGURE VIII-2
TIME OF DAY OF FATAL PEDESTRIAN ACCIDENTS
(6,702)



NOTE: 30 FATAL PEDESTRIAN ACCIDENTS UNKNOWN TIME

Pedestrians in all age groups were more frequently killed away from intersections than at intersections. However, for pedestrians over the age of 44 the rate of fatalities at intersections exceeds the rate for nonintersections (Table VIII-4).

Alcohol involvement in pedestrian deaths is discussed in Chapter 2.

PEDALCYCLISTS

A total of 839 pedalcyclists were killed in 1983. Although only 18.0 percent of all fatal accidents occurred on local streets, 25.7 percent of those involving a pedalcyclist were on such roadways (Figure VIII-3). More than half (55.4 percent) of the pedalcyclist deaths occurred during the hours between 6 a.m. and 6 p.m. (Figure VIII-4).

FIGURE VIII-3
FATAL ACCIDENTS INVOLVING PEDALCYCLISTS BY ROADWAY FUNCTION CLASS
(832)

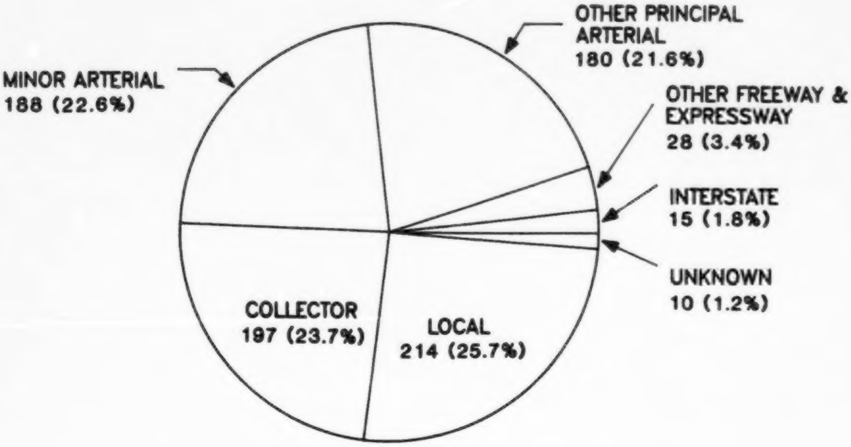


TABLE VIII-4
[illegible] BY AGE AND LOCATION

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Unknown	Total	Percent
[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4	387	5.7
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	17	764	11.2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	47	0.7
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	22	1,198	17.6
[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		39	0.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	74	4,965	72.8
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8	588	8.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	82	5,592	82.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		34	0.5
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	104	6,824	100.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.5	100.0	

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Most (80 percent) of the preschool age pedalcyclists killed in traffic accidents were killed away from intersections. Only 24.7 percent of all pedalcyclist fatalities occurred at an intersection (Table VIII-5). However, the frequency of pedalcyclist fatalities at intersections was more prevalent for cyclists 5-17 and over 64.

FIGURE VIII-4
TIME OF DAY OF FATAL PEDALCYCLIST ACCIDENTS
(832)

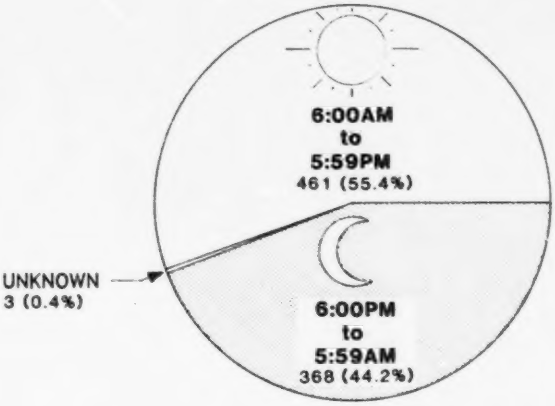
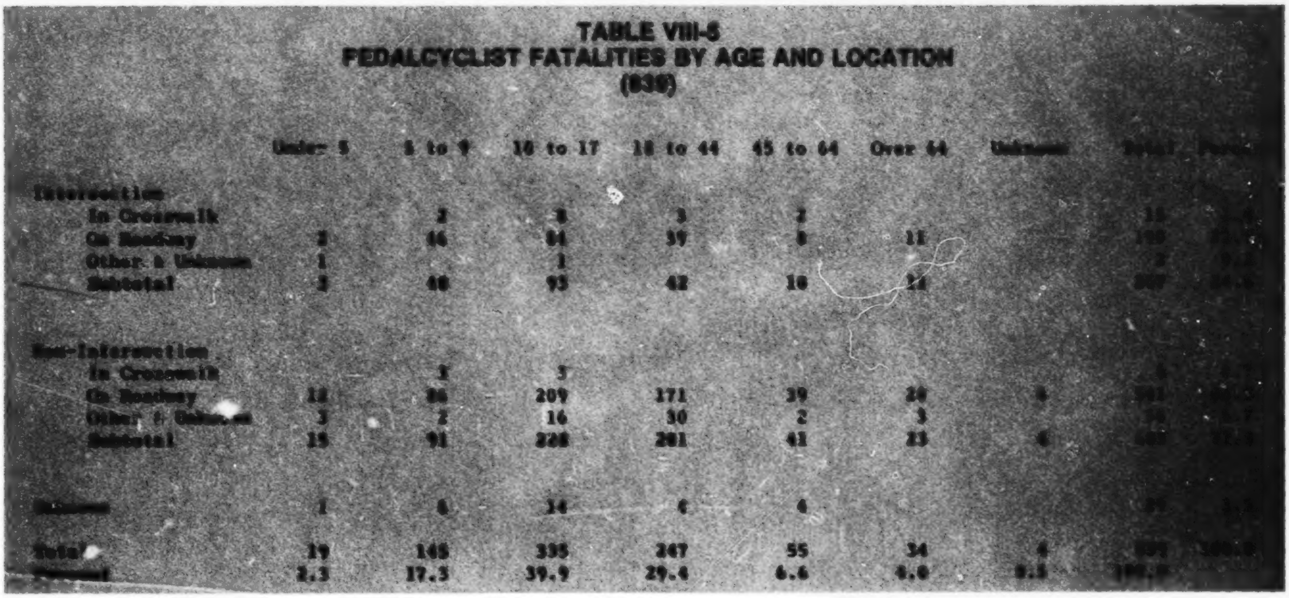


TABLE VIII-5
PEDALCYCLIST FATALITIES BY AGE AND LOCATION
(839)



	Under 5	5 to 9	10 to 17	18 to 44	45 to 64	Over 64	Unknown	Total	Percent
Intersection									
In Crosswalk		2	3	3	2			10	[illegible]
On Roadway	2	46	89	39	8	11		195	[illegible]
Other & Unknown	1		1					2	0.2
Subtotal	3	48	93	42	10	11		207	[illegible]
Non-Intersection									
In Crosswalk		3	3					6	[illegible]
On Roadway	12	86	209	171	39	20	6	[illegible]	[illegible]
Other & Unknown	3	2	16	30	2	3		[illegible]	[illegible]
Subtotal	15	91	228	201	41	23	6	[illegible]	[illegible]
Unknown	1	6	14	4	4			[illegible]	[illegible]
Total	19	145	335	247	55	34	6	[illegible]	100.0
Percent	2.3	17.3	39.9	29.4	6.6	4.0	[illegible]	100.0	

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OTHER NON-OCCUPANTS

There were 81 "other nonoccupants "killed in 1983. These were nearly all occupants of vehicles not in transport, but they included people on horseback and occupants of animal-drawn conveyances. The largest segment (31.9 percent) of these accidents occurred on the Interstate System (Figure VIII-5).

FIGURE VIII-5
FATAL ACCIDENTS INVOLVING OTHER NONOCCUPANTS BY ROADWAY FUNCTION CLASS
(72)

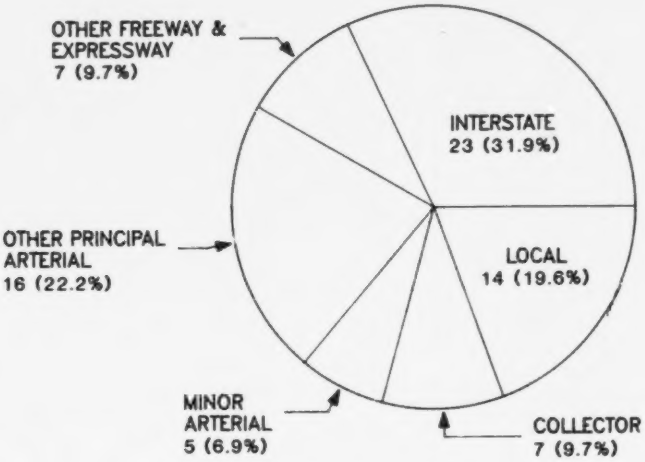

TABLE VIII-6
OTHER NONOCCUPANT FATALITIES BY AGE AND LOCATION
(81)

	Under 5	5 to 9	10 to 17	18 to 44	45 to 64	Over 64	Unknown	Total	Percent
Intersection									
In Crosswalk			1					1	1.2
On Roadway			1	2				3	3.7
Subtotal			2	2				4	4.9
Non-Intersection									
On Roadway	1	6	3	6	4	2		22	27.2
Other & Unknown	5		3	29	9	2		48	59.3
Subtotal	6	6	6	35	13	4		70	86.5
Unknown			3	3			1	7	8.6
Total	6	6	11	40	13	4	1	81	100.0
Percent	7.4	7.4	13.6	49.5	16.0	4.9	1.2	100.0	

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IX. Selected Comparison 1975-1983

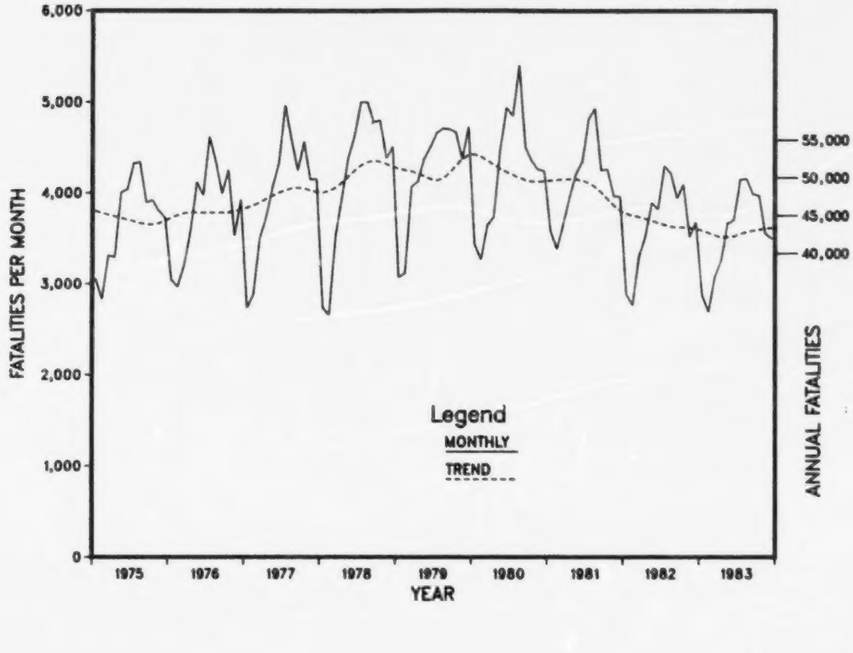
The number of traffic fatalities was less in 1983 than in any other calendar year since FARS began in 1975. For the third straight year there has been a decline in annual fatalities.

The decrease from 1982 to 1983 was only about a fourth of the 1981 to 1982 decrease, suggesting that the downward trend that began in 1981 may be leveling off.

Annual totals cannot show trends in the short term because they do not reveal what is happening during the year. Monthly totals, plotted as the solid curve in Figure IX-1, do give the within-year pattern but their large seasonal variations mask the trend. The trend curve, shown dashed in the figure, is a plot of the monthly data adjusted for seasonal effect and for the number of weekends in each month and further smoothed to remove random variation. The smoothing process used is described in the March-April 1984 issue of the NHTSA publication "Fatality Trends".

According to this trend curve the recent fatality decline ended near May 1983 and the trend was still headed upward at the end of that year. This provides a somewhat stronger indication than do the annual totals that the decline observed over the past few years has indeed ceased.

FIGURE IX-1
TOTAL MONTHLY TRAFFIC FATALITIES
AND TREND



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X. Classifications

Accident, injury and fatality counts as coded in FARS may differ somewhat from those based on the standard definitions in the Manual on Classification of Motor Vehicle Traffic Accidents.* The standard was developed to establish uniformity in the classification and use of accident data. As such it applies to all accidents, whether or not they result in death. In part because FARS counts only fatal accidents (and only those where death occurs within 30 days of the accident), its counts are not always comparable to ANSI classification counts.

However, the following sections summarize 1983 FARS data as distributed among ANSI classifications where applicable. Paragraph numbers cited for each section are those used in the ANSI manual.

People by Injury Severity (ANSI 3.1)

In ANSI, five categories are used to classify accident-involved persons by the most severe injury sustained:

- No injury
- Possible injury
- Evident but non-incapacitating injury
- Incapacitating injury
- Fatal injury

The level of injury severity used is that which prevailed at the scene of the accident, with one significant exception--fatalities. Using ANSI manual criteria, injuries are considered fatal if they result in death anytime within 12 months of the accident. FARS uses instead the 30-day rule (see Chapter I) to conform with international counting systems. Expansion of the 30 day rule to 12 months results in a count of only 2 percent more fatalities and significantly sacrifices timeliness of reporting. Using the 12-month rule adopted by ANSI, full fatality counts would not be available until at least a full year after the end of the base year in which the counted accidents occurred.

Personal involvements in FARS-counted accidents in 1983 were distributed among the ANSI injury-severity classifications as follows:

o	No Injury	20,672
o	Possible Injury	5,195
o	Non-Incapacitating	13,089
o	Incapacitating	16,961
o	Fatal	42,584
o	Unknown Severity	168
o	Died prior to Accident	8
o	Unknown	627
o	Total	99,304

Vehicles by Damage Severity (ANSI 3.2)

Four categories are specified by ANSI to classify vehicle involvements in accidents by the most severe damage they receive:

- No damage
- Other damage
- Functional damage
- Disabling damage

These classifications usually are applied only to vehicles involved in non-injury accidents because injury to a person is considered more severe than property damage. Nevertheless, vehicle involvements in FARS-counted accidents are also coded according to ANSI damage classifications. In 1983, this resulted in the following distribution of involved vehicles:

o	No damage	1,937
o	Other damage	5,865
o	Functional damage	8,187
o	Disabling damage	37,859
o	Unknown	1,251
o	**Total**	**55,099**

Accidents by Injury Severity (ANSI 3.3)

Using ANSI groupings, accidents are classified according to the most severe personal injury sustained in them, as described in 3.1. Using this method of classification, all 37,971 accidents in FARS are, by definition, fatal.

***Manual On Classification of Motor Vehicle Traffic Accidents**, National Safety Council, Third Edition, Chicago. ANSI D16.1-1976 (revision of D16.1-1970) November, 1976.

Accidents by Damage Severity (ANSI 3.4)

Accidents are also classified according to the most severe vehicle damage sustained, as in 3.2 above. Using ANSI classifications, the 1983 accidents counted in FARS had the following distribution of most severe vehicle damage:

No damage	1,552
Other damage	3,645
Functional damage	4,258
Disabling damage	27,591
Unknown damage	925
Total	37,971

Accidents by Number of Involved Vehicles (ANSI 3.5)

Accidents can also be classified by the number of motor vehicles in transport which were involved. non-contact vehicles, such as those that forced another off the road but were not themselves involved in an impact, are not counted as accident-involved. FARS accidents in 1983 were classified as follows:

1 vehicle	23,045
2 vehicles	13,238
3 vehicles	1,371
4 vehicles	223
5 or more vehicles	94
Total	37,971

Accidents by First Harmful Event (ANSI 3.6)

The first harmful event that occurs in each accident, rather than the most harmful event, is specified in the ANSI manual as a classification for uniformity in accident statistics reporting. The categories are mutually exclusive. The frequency of 1983 FARS-counted accidents was distributed among first harmful events as follows:

Noncollision overturn	3,550
Other noncollision	648
Collision with pedestrian	6,431
Collision with motor vehicle in transport	14,099
Collision with parked vehicle	599
Collision with railway vehicle	403
Collision with pedalcycle	835
Collision with animal	88
Collision with fixed object	11,061
Collision with other object	242
Unknown	15
Total	37,971

Accidents by Location (ANSI 3.7)

Two mutually exclusive categories of accident location are specified in the ANSI manuals: on-roadway and off-roadway.

An on-roadway accident is (1) an event in which the initial point of contact between colliding units or between the colliding unit and a fixed or non-fixed object in the **first harmful event** is within that part of the trafficway designed, improved and ordinarily used for motor vehicle traffic or (2) a non-collision in which the vehicle involved was partly or entirely on the roadway at the time of the first harmful event. FARS accidents in 1983 occurred:

On-roadway	22,949
Off-roadway	14,973
Unknown	49
Total	37,971

Junction related locations include four mutually exclusive categories. Intersection-related accidents occur on approaches to or exits from intersections, interchanges and driveways as a result of activities, behavior or controls related to the movement of traffic through the intersection. Following are 1983 FARS data distributed among the four ANSI categories:

At intersection	8,358
Driveway access	1,277
Intersection-related	479
Non-junction	27,819
Unknown	38
Total	37,971

ANSI uses "class trafficway" to describe the administrative class of the roadway where an accident occurred. In 1983 FARS coding, class trafficway was replaced by "functional class". Class of trafficway is divided between two mutually exclusive categories:

- Fully controlled access highway
- Other

All Interstate highways and other freeways and expressways coded in FARS data are considered fully controlled.

Fully controlled	4,966
Other	32,910
Unknown	95
Total	37,971

Land Use is classified by ANSI as urban or rural, based on urban area boundaries approved by the Federal Highway Administration. Fatal accidents in 1983 were distributed as follows:

Urban	16,691
Rural	21,218
Unknown	62
Total	37,971

Accidents are also classified by governmental jurisdiction. County and city jurisdictions were coded in FARS but, in the interest of brevity, the resulting body of data is not included in this report, but are available from NHTSA.

Motor Vehicle Classifications (ANSI 3.8)

ANSI specifies eight mutually exclusive categories for classifying motor vehicles involved in accidents:

- Automobile
- Motorcycle
- Bus
- Light truck
- Single unit truck
- Truck tractor
- Truck combination
- Other motor vehicles

Categories used in FARS, although more detailed, are compatible with these ANSI specifications. Summarized according to ANSI definitions, the following vehicle involvements were counted in 1983 FARS accidents:

Automobile	33,288
Motorcycle	4,141
Bus	306
Light Truck	9,870
Other	7,640
Total	55,099

Glossary

Alcohol Involvement--An accident is considered to be alcohol involved if any of the following are true: (1) there was a positive blood alcohol test result on one of the involved drivers or nonoccupants, (2) the police investigation indicated that drinking was involved, whether there was a supporting alcohol test or not, or (3) if a driver was cited for Driving While Intoxicated or Driving Under the Influence of Liquor.

Automatic (Passive) Restraint System--Any restraint system that requires no action on the part of the driver or passengers to be effective in providing occupant crash protection, e.g., air bags or passive belts.

Body Type--Individual types of motor vehicles coded in the FARS file, as listed in Appendix B.

Buses--Unless otherwise noted, includes school buses, intercity buses, transit buses, and other large motor vehicles used to carry passengers.

Driver--An occupant of a vehicle who is in physical control of a motor vehicle in transport or, for an out-of-control vehicle, an occupant who was in control until control was lost.

Fatal Motor Vehicle Traffic Accident--An accident that involves a motor vehicle in transport on a trafficway and in which at least one person dies within 30 days of the accident.

First Harmful Event--The first event during an accident that caused injury or property damage.

Fixed Objects--Stationary structures or substantial vegetation attached to the terrain.

Gross Vehicle Weight (GVW)--The maximum rated capacity of a vehicle and includes the weight of the vehicle, all added equipment, driver and passengers, and load.

Heavy Truck--(1) single unit truck with GVW greater than 26,000 lbs., (2) tractor-trailer combination, (3) truck with cargo trailer(s), and (4) truck-tractor pulling no trailer. (See Appendix B.)

Initial Impact Point--The first impact point that produced personal injury or property damage.

Land Use--The accident location, i.e., urban or rural.

Light Truck--Pickups, vans, and truck based stationwagons. (see Appendix B.)

Manner of Collision--Accidents in which the first harmful event was a collision between two motor vehicles in transport and is described as one of the following:

> **Angle**--Collisions which are not head-on, rear-end, rear-to-rear, or sideswipe.
>
> **Head-on**--Refers to a collision where the front end of one vehicle collides with the front end of another vehicle while the two vehicles are traveling in opposite directions.
>
> **Rear-end**--A collision between the rear of one vehicle and the front of another vehicle.

Manual (Active) Restraint System--Occupant restraints that require some action, usually buckling, before they are effective. They include shoulder belt, lap belt, lap and shoulder belt, infant carrier, or child safety seat.

Medium Truck--Any single unit truck with a GVW between 10,000 and 26,000 lbs., or unknown GVW. (See Appendix B.)

Moped--A motor-driven cycle capable of speeds up to approximately 30 miles an hour and which can also be pedaled.

Most Harmful Event--The event during an accident that is judged to have produced the greatest personal injury or property damage.

Motorcycle--A two- or three-wheeled motor vehicle designed to transport one or two people. For the purpose of this report, the following are not included unless otherwise noted: motorscooters, minibikes, and mopeds. (See Appendix B.)

Motor Vehicle in Transport--A motor vehicle which is in motion or on a roadway.

Noncollision--A class of accidents in which the first harmful event does not involve a collision with a fixed object or a nonfixed object. This includes overturn, fire/explosion, gas inhalation, falls from a vehicle and injuries in a vehicle.

Nonoccupant--Any person who is not an occupant of a motor vehicle in transport and includes: (1) pedestrians, (2) pedalcyclists, (3) occupants of parked motor vehicles, and (4) others such as joggers, skateboard riders, people riding on animals, and persons riding in animal-drawn conveyances.

Objects Not Fixed--Objects that are movable or moving but are not motor vehicles, pedestrians, pedalcyclists, animals, or trains (e.g., cargo in roadway).

Occupant--Any person who is in or upon a motor vehicle in transport and includes the driver, passengers, and persons riding on the exterior of a motor vehicle (e.g., a skateboard rider who is set in motion by holding on to a vehicle).

Passenger--Any occupant of a motor vehicle who is not a driver.

Passenger Car--Any of the following types of motor vehicles: (1) convertible; (2) 2-door sedan, hardtop or coupe; (3) 4-door sedan or hardtop; (4) 3 or 5 door hatchback coupe; (5) automobile with pickup body; (6) stationwagon; and (7) other small four-wheel motor vehicles used primarily for carrying passengers. Passenger car sizes are as follows:

	Wheelbase
Small Subcompact	Under 96"
Subcompact	96-101"
Compact	102-111"
Intermediate	112-120"
Full Size	Over 120"

Pedalcyclist--A person on a vehicle that is powered solely by pedals.

Pedestrian--Any person not in or upon a motor vehicle or other vehicle.

Principal Impact Point--The impact that is judged to have produced the greatest personal injury or property damage.

Roadway--That part of a trafficway used for motor vehicle travel.

Roadway Function Class--The classification describing the character of service the street or highway is intended to provide.

Interstate--limited access divided facility of at least four lanes designated by the Federal Highway Administration as part of the Interstate System.

Other Freeways and Expressways--All urban principal arterials with limited control of access not on the Interstate System.

Other Principal Arterial--Major streets or highways, many with multi-lane or freeway design, serving high volume traffic corridor movements that connect major generators of travel.

Minor Arterials--Streets and highways linking cities and larger towns in rural areas and distributing trips to small geographic areas in urban areas (not penetrating identifiable neighborhoods).

Collectors--In rural areas, routes serving intracounty, rather than statewide travel. In urban areas, streets providing direct access to neighborhoods as well as direct access to arterials.

Local Streets and Roads--Streets whose primary purpose is feeding higher order systems, providing direct access with little or no through traffic.

School Bus--A specific type of vehicle which, independent of ownership or design, is used to transport children to and from school, or to or from school activities.

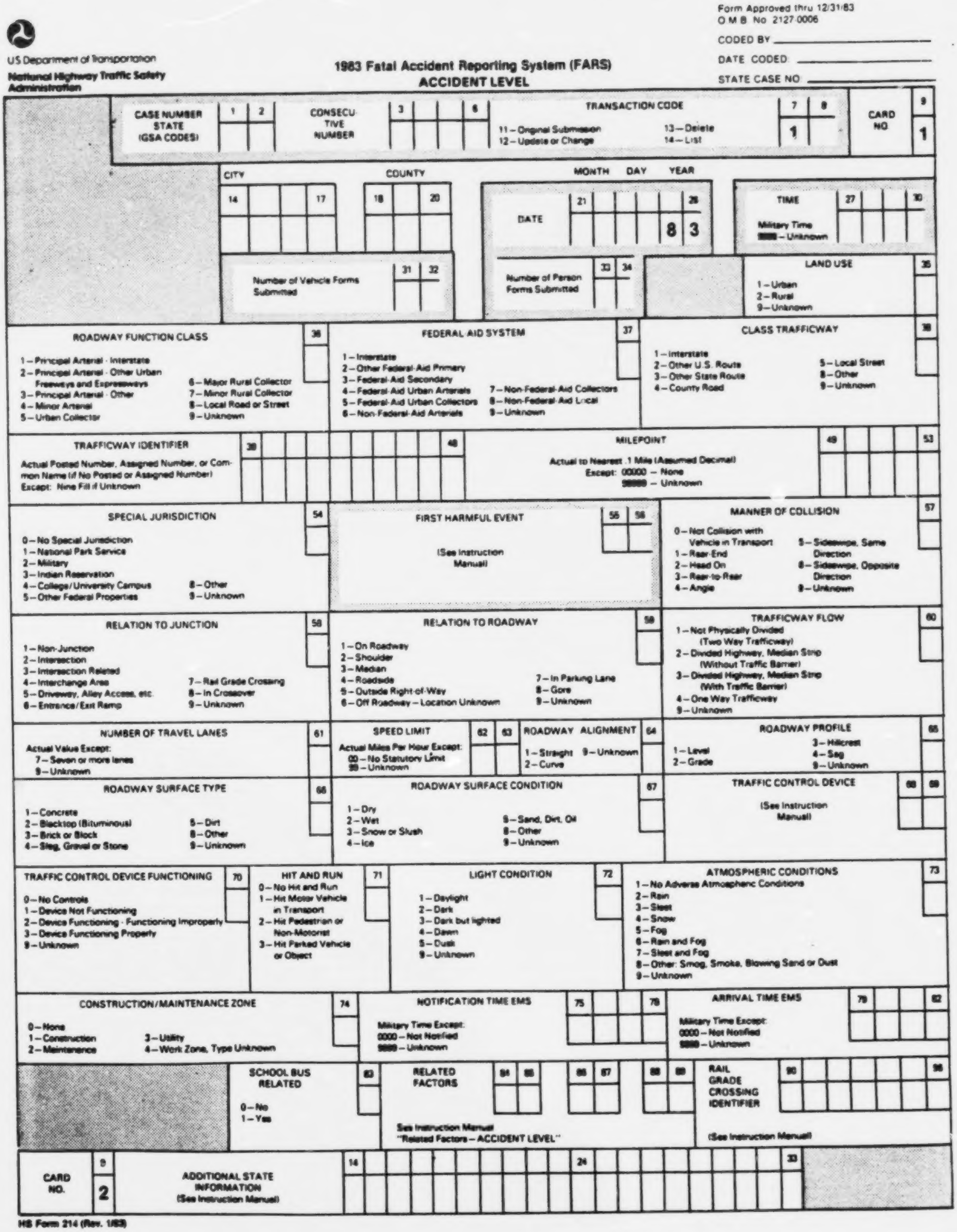
School Bus Related Accident--Any accident in which a vehicle, regardless of body design, used as a school bus is directly or indirectly involved, such as an accident involving school children alighting from a vehicle.

Special Vehicle--Consists of the following types of vehicles: (1) snowmobile; (2) farm equipment other than trucks; (3) dune buggy or swamp buggy; (4) construction equipment other than trucks; (5) ambulance; (6) large limousine; (7) self-propelled camper and motor home; (8) fire truck; (9) on/off road vehicle; and (10) other special vehicle.

Trafficway--Any road, street or highway open to the public as a matter of right or custom for moving persons or property from one place to another.

Vehicle Type--A series of motor vehicle body types that have been grouped together because of their design similarities. The principal vehicle types used in this report are passenger cars, motorcycles, pedalcycles, light trucks, medium trucks and heavy trucks, buses and special vehicles. See the definitions of each of the vehicle types elsewhere in this glossary.

Appendix A - 1983 Coding Forms



Form Approved thru 12/31/83
O M B No 2127-0006

CODED BY ____________

DATE CODED ____________

STATE CASE NO ____________

US Department of Transportation
National Highway Traffic Safety Administration

1983 Fatal Accident Reporting System (FARS)
ACCIDENT LEVEL

CASE NUMBER STATE (GSA CODES) 1 2

CONSECUTIVE NUMBER 3 6

TRANSACTION CODE 7 8 — 1
11 – Original Submission
12 – Update or Change
13 – Delete
14 – List

CARD NO 9 — 1

CITY 14 17

COUNTY 18 20

DATE 21 26 — MONTH DAY YEAR — 8 3

TIME 27 30
Military Time
9999 – Unknown

Number of Vehicle Forms Submitted 31 32

Number of Person Forms Submitted 33 34

LAND USE 35
1 – Urban
2 – Rural
9 – Unknown

ROADWAY FUNCTION CLASS 36
1 – Principal Arterial · Interstate
2 – Principal Arterial · Other Urban Freeways and Expressways
3 – Principal Arterial · Other
4 – Minor Arterial
5 – Urban Collector
6 – Major Rural Collector
7 – Minor Rural Collector
8 – Local Road or Street
9 – Unknown

FEDERAL AID SYSTEM 37
1 – Interstate
2 – Other Federal-Aid Primary
3 – Federal-Aid Secondary
4 – Federal-Aid Urban Arterials
5 – Federal-Aid Urban Collectors
6 – Non-Federal-Aid Arterials
7 – Non-Federal-Aid Collectors
8 – Non-Federal-Aid Local
9 – Unknown

CLASS TRAFFICWAY 38
1 – Interstate
2 – Other U.S. Route
3 – Other State Route
4 – County Road
5 – Local Street
8 – Other
9 – Unknown

TRAFFICWAY IDENTIFIER 39 48
Actual Posted Number, Assigned Number, or Common Name (if No Posted or Assigned Number)
Except: Nine Fill if Unknown

MILEPOINT 49 53
Actual to Nearest .1 Mile (Assumed Decimal)
Except: 00000 – None
99999 – Unknown

SPECIAL JURISDICTION 54
0 – No Special Jurisdiction
1 – National Park Service
2 – Military
3 – Indian Reservation
4 – College/University Campus
5 – Other Federal Properties
8 – Other
9 – Unknown

FIRST HARMFUL EVENT 55 56
(See Instruction Manual)

MANNER OF COLLISION 57
0 – Not Collision with Vehicle in Transport
1 – Rear-End
2 – Head On
3 – Rear-to-Rear
4 – Angle
5 – Sideswipe, Same Direction
6 – Sideswipe, Opposite Direction
9 – Unknown

RELATION TO JUNCTION 58
1 – Non-Junction
2 – Intersection
3 – Intersection Related
4 – Interchange Area
5 – Driveway, Alley Access, etc.
6 – Entrance/Exit Ramp
7 – Rail Grade Crossing
8 – In Crossover
9 – Unknown

RELATION TO ROADWAY 59
1 – On Roadway
2 – Shoulder
3 – Median
4 – Roadside
5 – Outside Right-of-Way
6 – Off Roadway – Location Unknown
7 – In Parking Lane
8 – Gore
9 – Unknown

TRAFFICWAY FLOW 60
1 – Not Physically Divided (Two Way Trafficway)
2 – Divided Highway, Median Strip (Without Traffic Barrier)
3 – Divided Highway, Median Strip (With Traffic Barrier)
4 – One Way Trafficway
9 – Unknown

NUMBER OF TRAVEL LANES 61
Actual Value Except:
7 – Seven or more lanes
9 – Unknown

SPEED LIMIT 62 63
Actual Miles Per Hour Except:
00 – No Statutory Limit
99 – Unknown

ROADWAY ALIGNMENT 64
1 – Straight
2 – Curve
9 – Unknown

ROADWAY PROFILE 65
1 – Level
2 – Grade
3 – Hillcrest
4 – Sag
9 – Unknown

ROADWAY SURFACE TYPE 66
1 – Concrete
2 – Blacktop (Bituminous)
3 – Brick or Block
4 – Slag, Gravel or Stone
5 – Dirt
8 – Other
9 – Unknown

ROADWAY SURFACE CONDITION 67
1 – Dry
2 – Wet
3 – Snow or Slush
4 – Ice
5 – Sand, Dirt, Oil
8 – Other
9 – Unknown

TRAFFIC CONTROL DEVICE 68 69
(See Instruction Manual)

TRAFFIC CONTROL DEVICE FUNCTIONING 70
0 – No Controls
1 – Device Not Functioning
2 – Device Functioning · Functioning Improperly
3 – Device Functioning Properly
9 – Unknown

HIT AND RUN 71
0 – No Hit and Run
1 – Hit Motor Vehicle in Transport
2 – Hit Pedestrian or Non-Motorist
3 – Hit Parked Vehicle or Object

LIGHT CONDITION 72
1 – Daylight
2 – Dark
3 – Dark but lighted
4 – Dawn
5 – Dusk
9 – Unknown

ATMOSPHERIC CONDITIONS 73
1 – No Adverse Atmospheric Conditions
2 – Rain
3 – Sleet
4 – Snow
5 – Fog
6 – Rain and Fog
7 – Sleet and Fog
8 – Other: Smog, Smoke, Blowing Sand or Dust
9 – Unknown

CONSTRUCTION/MAINTENANCE ZONE 74
0 – None
1 – Construction
2 – Maintenance
3 – Utility
4 – Work Zone, Type Unknown

NOTIFICATION TIME EMS 75 78
Military Time Except:
0000 – Not Notified
9999 – Unknown

ARRIVAL TIME EMS 79 82
Military Time Except:
0000 – Not Notified
9999 – Unknown

SCHOOL BUS RELATED 83
0 – No
1 – Yes

RELATED FACTORS 84 85 86 87 88 89
See Instruction Manual
"Related Factors – ACCIDENT LEVEL"

RAIL GRADE CROSSING IDENTIFIER 90 96
(See Instruction Manual)

CARD NO. 9 — 2

ADDITIONAL STATE INFORMATION 14 24 33
(See Instruction Manual)

HS Form 214 (Rev. 1/83)

U.S. Department of Transportation
National Highway Traffic Safety Administration

Form Approved thru 12/31/83
O.M.B. No. 2127-0006

1983 Fatal Accident Reporting System (FARS)
PERSON LEVEL

CODED BY: ____________________
DATE CODED: ____________________
STATE CASE NO: ____________________

CASE NUMBER STATE (GSA CODES) 1 2

CONSECUTIVE NUMBER 3 6

TRANSACTION CODE 7 8
31 – Original Submission
32 – Update or Change
3

CARD NO. 9
1

VEHICLE NUMBER (Assigned by Analyst) 10 11
00 – Non-Motorist

PERSON NUMBER 12 13
(Assigned by Analyst)

NON-MOTORIST STRIKING VEHICLE NUMBER 14 15
Assigned Vehicle Number
Except:
99 – Unknown

AGE 16 17
Actual Value
00 – Up to One Year
97 – Ninety-Seven Years or Older
99 – Unknown

SEX 18
1 – Male
2 – Female
9 – Unknown

PERSON TYPE 19
1 – Driver of a Motor Vehicle in Transport
2 – Passenger of a Motor Vehicle in Transport

3 – Occupant of a Motor Vehicle Not in Transport
4 – Occupant of a Non-Motor Vehicle Transport Device

5 – Non-Occupant – Pedestrian
6 – Non-Occupant – Bicyclist
7 – Non-Occupant – Other Cyclist
8 – Non-Occupant – Other or Unknown

9 – Unknown Occupant Type in a Motor Vehicle in Transport

SEATING POSITION 20 21
00 – Non-Motorist
11 – Front Seat – Left Side (Driver's Side)
12 – – Middle
13 – – Right Side
18 – – Other
19 – – Unknown
21 – Second Seat – Left Side
22 – – Middle
23 – – Right Side
28 – – Other
29 – – Unknown
31 – Third Seat – Left Side
32 – – Middle
33 – – Right Side
38 – – Other
39 – – Unknown
41 – Fourth Seat – Left Side
42 – – Middle
43 – – Right Side
48 – – Other
49 – – Unknown
50 – Sleeper Section of Cab (Truck)
51 – Other Passenger in Enclosed Passenger or Cargo Area
52 – Other Passenger in Unenclosed Passenger or Cargo Area
53 – Other Passenger in Passenger or Cargo Area, Unknown Whether or Not Enclosed
54 – Trailing Unit
55 – Riding on Vehicle Exterior
99 – Unknown

MANUAL (ACTIVE) RESTRAINT SYSTEM – USE 22
0 – None Used - Vehicle Occupant/Not Applicable - Non-Motorist
1 – Shoulder Belt
2 – Lap Belt
3 – Lap and Shoulder Belt
4 – Child Safety Seat
5 – Motorcycle Helmet
8 – Restraint Used – Type Unknown or Other including Other Helmet
9 – Unknown

AUTOMATIC (PASSIVE) RESTRAINT SYSTEM – FUNCTION 23
0 – Not Equipped or Non-Motorist
1 – Automatic Belt in Use
2 – Automatic Belt Not In Use
3 – Deployed Air Bag
4 – Non-deployed Air Bag
9 – Unknown

NON-MOTORIST LOCATION 24 25
00 – Not Applicable – Vehicle Occupant
01 – Intersection – In Crosswalk
02 – Intersection – On Roadway, Not in Crosswalk
03 – Intersection – On Roadway, Crosswalk Not Available
04 – Intersection – On Roadway, Crosswalk Availability Unknown
05 – Intersection – Not on Roadway
09 – Intersection – Unknown
10 – Non-intersection – In Crosswalk
11 – Non-intersection – On Roadway, Not in Crosswalk
12 – Non-intersection – On Roadway, Crosswalk Not Available
13 – Non-intersection – On Roadway, Crosswalk Availability Unknown
14 – Non-intersection – In Parking Lane
15 – Non-intersection – On Road Shoulder
16 – Non-intersection – Bike Path
17 – Non-intersection – Outside Trafficway
18 – Non-intersection – Other, Not on Roadway
19 – Non-intersection – Unknown
99 – Unknown

EJECTION 26
0 – Not Ejected
1 – Totally Ejected
2 – Partially Ejected
9 – Unknown

EXTRICATION 27
0 – Not Extricated
1 – Extricated
9 – Unknown

POLICE REPORTED ALCOHOL INVOLVEMENT 28
0 – No (Alcohol Not Involved)
1 – Yes (Alcohol Involved)
8 – Not Reported
9 – Unknown (Police Reported)

ALCOHOL TEST RESULT 29 30
Actual Value (Decimal Implied before First Digit) (0.xx)
95 – Test Refused
96 – None Given
97 – AC Test Performed, Results Unknown
99 – Unknown

INJURY SEVERITY 31
0 – No Injury (O)
1 – Possible Injury (C)
2 – Nonincapacitating Evident Injury (B)
3 – Incapacitating Injury (A)
4 – Fatal Injury (K)
5 – Injured, Severity Unknown
6 – Died Prior to Accident
9 – Unknown

TAKEN TO HOSPITAL OR TREATMENT FACILITY 32
0 – No
1 – Yes
9 – Unknown

DEATH DATE 33 38
000000 – Not Applicable
999999 – Unknown
MONTH DAY YEAR

DEATH TIME 39 42
Military Time Except:

0000 – Not Applicable
9999 – Unknown

RELATED FACTORS 43 44 45 46 47 48
See Instruction Manual
"Related Factors – PERSON LEVEL"

HS Form 214B (Rev. 1/83)

BEST COPY AVAILABLE

US Department of Transportation
National Highway Traffic Safety Administration

Form Approved thru 12/31/83
O M B No 2127 0006

CODED BY ____________

DATE CODED ____________

STATE CASE NO ____________

1983 Fatal Accident Reporting System (FARS)
VEHICLE/DRIVER LEVEL

CASE NUMBER STATE (GSA CODES) 1 2

CONSECUTIVE NUMBER 3 6

TRANSACTION CODE 7 8 — 2
21 – Original Submission
22 – Update or Change

CARD NO 9 — 1

VEHICLE NUMBER (Assigned by Analyst) 10 11

VEHICLE MAKE (See Instruction Manual) 14 15

VEHICLE MODEL (See Instruction Manual) 16 17

BODY TYPE (See Instruction Manual) 18 19

MODEL YEAR 20 21
Actual Value except
99 – Unknown

VEHICLE IDENTIFICATION NO. 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38
Actual Value except:
Zero Fill if no VIN
Nine Fill if Unknown

REGISTRATION STATE 39 40
GSA CODES Except:
00 – Not Applicable
92 – No Registration
93 – Multiple State Reg. In-State
94 – Multiple State Reg., Out-of-State
95 – U.S. Government Tags
96 – Military Vehicle
97 – Foreign Countries
99 – Unknown

ROLLOVER 41
0 – No Rollover
1 – First Event
2 – Subsequent Event

JACKKNIFE 42
0 – Not an Articulated Vehicle
1 – No
2 – First Event
3 – Subsequent Event

TRAVEL SPEED 43 44
Actual Miles Per Hour Except:
00 – Stopped Vehicle
97 – Ninety-seven MPH or Greater
99 – Unknown

HAZARDOUS CARGO 45
0 – No
1 – Yes
9 – Unknown

VEHICLE TRAILERING 46
0 – No
1 – Yes, One Trailing Unit
2 – Yes, Two or more Trailing Units
3 – Yes, Number of Trailing Units Unknown
9 – Unknown

SPECIAL USE 47
0 – No Special Use
1 – Taxi
2 – Vehicle Used as School Bus
3 – Vehicle Used as other Bus
4 – Military
5 – Police
6 – Ambulance
7 – Firetruck
9 – Unknown

EMERGENCY USE 48
0 – No
1 – Yes

IMPACT POINT – INITIAL 49 50
00 – Non-Collision
01-12 – Clock Points
13 – Top
14 – Undercarriage
15 – Under Ride
16 – Override
99 – Unknown

IMPACT POINT – PRINCIPAL 51 52
00 – Non-Collision
01-12 – Clock Points
13 – Top
14 – Undercarriage
15 – Under Ride
16 – Override
99 – Unknown

EXTENT OF DEFORMATION 53
0 – None
2 – Other (Minor)
4 – Functional (Moderate)
6 – Disabling (Severe)
9 – Unknown

VEHICLE ROLE 54
0 – Non-Collision
1 – Striking
2 – Struck
3 – Both
9 – Unknown

MANNER OF LEAVING SCENE 55
1 – Driven
2 – Towed Away
3 – Abandoned
9 – Unknown

FIRE OCCURRENCE 56
0 – No Fire
1 – Fire Occurred in Vehicle During Accident

NUMBER OF OCCUPANTS 57 58
Actual Value if Total Known
96 – 96 or more
97 – Unknown – Only Injured Reported
99 – Unknown

RELATED FACTORS 59 60 61 62
See Instruction Manual
"Related Factors – VEHICLE LEVEL"

VEHICLE MANEUVER 63
(See Instruction Manual)

MOST HARMFUL EVENT 65 66
(See Instruction Manual)

Card No 9 — 2

DRIVER PRESENCE 14
1 – Driver Operated Vehicle
2 – Driverless
3 – Driver Left Scene
9 – Unknown

LICENSE STATE GSA CODES 15 16
Except:
94 – Military
95 – Canada
96 – Mexico
97 – Other Foreign Countries
99 – Unknown

LICENSE/CLASS VEHICLE COMPLIANCE 17
0 – No License Required
1 – No License, License Required
2 – Valid License for This Class Vehicle Only
3 – One Valid License, but Not for This Class Vehicle
4 – Multiple Class Licenses, Valid License for This Class Vehicle
5 – Multiple Class Licenses, No Valid License for This Class Vehicle
9 – Unknown

LICENSE STATUS 18
0 – None Required
1 – None
2 – Valid
3 – Suspended
4 – Revoked
5 – Expired
6 – Cancelled or Denied
7 – Learner's Permit
8 – Temporary
9 – Unknown

COMPLIANCE WITH LICENSE RESTRICTIONS 19
0 – No Restrictions
1 – Restrictions Complied With
2 – Restrictions Not Complied With
3 – Restrictions, Compliance Unknown
9 – Unknown

DRIVER TRAINING 20
0 – None
1 – High School
2 – Commercial
3 – School Bus
4 – Traffic School
5 – Two or more Types
6 – Training, Type Unknown
9 – Unknown

VIOLATIONS CHARGED 21
0 – None
1 – Alcohol or Drugs
2 – Speeding
3 – Alcohol or Drugs and Speeding
4 – Reckless Driving
5 – Driving with a Suspended or Revoked License
6 – Other Moving Violation
7 – Non-Moving Violation
8 – Violation, Type Unknown or Other Violation
9 – Unknown

PREVIOUS RECORDED ACCIDENTS 22 23
Actual Value Except:
00 – None
99 – Unknown

PREVIOUS RECORDED SUSPENSIONS AND REVOCATIONS 24 25
Actual Value Except:
00 – None
99 – Unknown

PREVIOUS DWI CONVICTIONS 26 27
Actual Value Except:
00 – None
99 – Unknown

PREVIOUS SPEEDING CONVICTIONS 28 29
Actual Value Except:
00 – None
99 – Unknown

PREVIOUS OTHER HARMFUL MV CONVICTIONS 30 31
Actual Value Except:
00 – None
99 – Unknown

DATE OF LAST ACCIDENT, SUSPENSION, OR CONVICTION 32 35
Mo. Yr.
00 – No Record
99 – Unknown

DATE OF FIRST ACCIDENT SUSPENSION, OR CONVICTION 36 39
Mo. Yr.
00 – No Record
99 – Unknown

RELATED FACTORS 40 41 42 43 44 45
See Instruction Manual,
"Related Factors – DRIVER LEVEL"

HS Form 214A (Rev. 1/83)

Appendix B

ORDER FORM FOR NHTSA TAPES / DOCUMENTATION

The U.S. Department of Transportation, Transportation Systems Center (DOT/TSC) has the following NHTSA data tapes, and/or, tape documentation available as specified below. Mark the appropriate blocks with an ("X") to indicate item(s) desired. Years required should be indicated by circling those dates

I. AVAILABLE DATA TAPES* ($150.00 per tape, per year)

- ☐ **Fatal Accident Reporting System (FARS)**
  - o Sequential Version - 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983
  - o SAS Version - 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983
- ☐ **National Accident Sampling System (NASS)**
  - o Sequential Version - 1979, 1980, 1981, 1982
  - o SAS Version - 1979, 1980, 1981, 1982
- ☐ **National Crash Severity Study (NCSS) - Sequential Versions only**
  - o Pre-April (Augmented) - Jan. 1977 - Mar. 1978
  - o Post-April - Apr. 1978 - Mar. 1979
- ☐ **Pedestrian Injury Causation Study (PICS)**
  - o 1 Tape - SAS Version only

*Data tapes are available in ASCII or EBCDIC Code and tape density of 1600 or 6250 BPI Please specify characteristics desired by circling Documentation will be provided with each tape purchased

II. AVAILABLE DOCUMENTATION

- ☐ **Fatal Accident Reporting System**
  - o 1975 - 1981, 1 document, @ $15.00
  - o 1982, 1983, 1 document, @ $15.00
- ☐ **National Accident Sampling System @ $5.00 each year**
  - o 1979, 1980, 1981, 1982
- ☐ **National Crash Severity Study**
  - o 1 document, @ $5.00
- ☐ **Pedestrian Injury Causation Study**
  - o 1 document, @ $5.00

****TOTAL AMOUNT: $____________**

**NOTE Some Federal and State Offices along with their supporting contractors may not be subject to these charges To clarify, please call Jane Hilley at NHTSA (202) 426-4844

Please enclose a check or money order for the correct amount, made payable to DOT / Transportation Systems Center Mail to

John F. Mitchell, DTS-32
DOT / Transportation Systems Center
Kendall Square
Cambridge, MA 02142

Please send tapes and/or documentation to

Company: ____________________________
Attention ____________________________
Address ____________________________
City ______________ **State** ____ **Zip** ______
Please include person to contact and telephone number
____

Shipment will be made by regular mail unless otherwise specified If you wish to have it sent by other means, please include company and account number ______________
____

Appendix C
Cross Reference for Previous FARS Reports

TABLES

1983	1982	1981
1	1	4
		--
I-1	5	--
I-2	6	--
I-3	7	--
I-4	8	--
I-5	9	--
I-6	10	--
I-7	11	--
I-8	12	--
I-9	13	--
I-10	14	--
I-11	16	--
I-12	17	--
I-13	18	--
I-14	19	--
I-15	20	--
I-16	21	--
I-17	22	--
I-18	23	--
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II-1	27	--
II-2	26	--
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II-6	32	30
II-7	--	--
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III-2	3	1
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IV-3	44	10
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IV-5	46	--
IV-6	47	--
IV-7	71	43
IV-8	73	--
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VI-7	56	19
VI-8	57	20
VI-9	58	21
VI-10	59	22
VI-11	60	23
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II-3	8	46
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III-3	16	--
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III-5	18	2
III-6	19	3
III-7	20	5
III-8	22	7
III-9	23	8
III-10	24	4
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V-8	37	18
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VI-2	39	--
VI-3	40	--
VI-4	41	--
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VI-6	43	22
VI-7	44	23
VI-8	45	24
VI-9	46	25
VI-10	47	26
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